SERVICE MANUAL

NAD

SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either mothod A or B:

A. Leakage test "cold":
   1. Unplug the AC cord; turn power switch ON.
   2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
   3. Touch other lead to all exposed metal parts.
   4. Impedance measurement must be 0.3-5.0 Megohms.

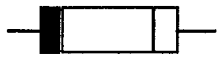
B. Leakage test, "live" :
   1. Plug unit directly into the AC outlet: do not use isolation transformer.
   2. Connect one lead of the Leakage Current Tester to earth ground.
   3. Touch other lead to all exposed metal parts.
   4. Leakage measurement must be less than 0.5 milliamps.

523 Compact Disc Player

523
Compact Disc Player

SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Circuit No.	Part No.	Description
F901	FS3015201FUC	Fuse, 300mA/250V <AH>
	FS8005202FEU	Fuse, 80mA/250V <C><B1>

NOTE: <AH> : U.S.A., Canadian model only
<C, B1>: Australia and European models only

2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

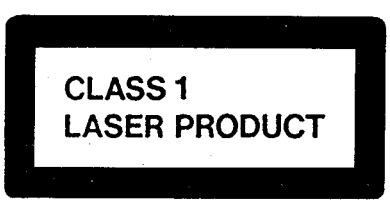
Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

Specifications : 3.3 Mohm ± 10% at 500V.

LASER WARNING LABEL

These labels are located on the mechanism.

DANGER — INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION — HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED.
ATTENTION — RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ECLENCHEMENT DE SECURITE ANNULE.
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAF-BRYDER ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
LAC57ONK01
VARNING
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
ADVARSEL
USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.



Laser Diode Properties
Material: GaAlAs
Wavelenghth: 760-800nm
Emission Duration: continuous
Laser output: max. 0.5mW*
***This output is the value measure at a distance about 1.8mm from the objective lens surface on the Optical Pick-up Block.**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED. INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

INPORTANT NOTES

INSTRUCTIONS FOR HANDLING OPTICAL-SYSTEM-BLOCK PICK-UP

Electrostatic breakdown of the laser diode in the optical-system-block may occur due to a potential difference caused by the electrostatic charge accumulated on clothing, body, etc. A ground must be provided as follows to prevent any electrostatic discharge during unpacking or repair work.

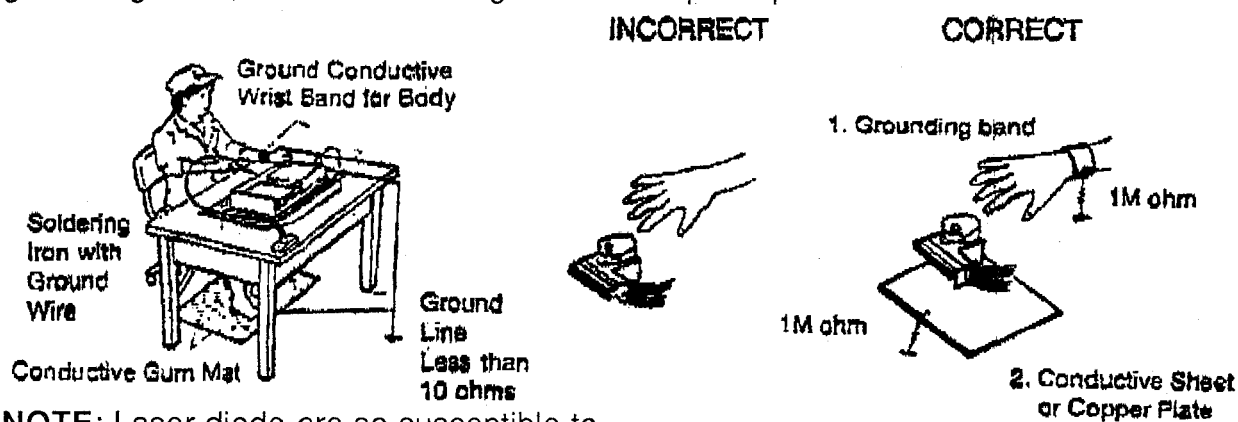
1. Body Ground.

Be sure to wear a grounding band (1M ohm) that is properly grounded to remove any static electricity from your clothing or body.

2. Ground for work Bench

Be sure to place a conductive sheet (1M ohm) or copper plate with proper grounding on the work bench or other surface on which the pick-up is to be placed.

3. Because a static electricity charge on clothing does not discharge through the body grounding band, do not let clothing contact the pick-up unit.



NOTE: Laser diode are so susceptible to damage from static electricity that even if a static discharge does not ruin the diode, it can shorten its life or cause it to work improperly.

PRECAUTIONS FOR CHECKING BEAM EMISSION OF LASER DIODE

The laser beam of this unit is focused on the reflecting surface of the objective lens in the optical system block. Therefore, keep your eyes at least 12 inches (30 cm) away from the objective lens when the laser diode is ON.

(Checking Method for Laser Diode and Focus Search Function.)

When the POWER switch is turned ON after the chucking arm is removed, observe the objective lens and confirm that the following operations are performed properly.

(The optical system block should be at the lead-in area position before chucking are is removed)

(1) The laser should be at the innermost position after the chucking arm is removed.

(2) The diffused light of the laser beam should be seen when the POWER switch is turned ON.

(3) Vertical (up and down) movement of the objective lens (several times) will take place.

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SPECIFICATIONS

System:	Compact Disc Digital Audio
Error correction:	CIRC system
D/A converter:	1 bit PWM/ACCUPULSE
Sampling frequency:	44.1kHz
Number of channels:	2 (stereo)
Frequency response:	20Hz - 20kHz: ±0.3dB
Total harmonic distortion:	0.0035% (at 1kHz)
Dynamic range:	97dB (at 1kHz, -60dB)
Signal to noise ratio (A WTD):	>100dB
Channel separation:	>92dB (at 1kHz)
Wow and Flutter:	Below threshold of measurability
Output level:	2.16 volts r.m.s.
Power consumption:	18 watts
Power supply rating:	AC 120V, 60Hz <AH> AC 230V, 50Hz <C>
Dimensions (WxHxD):	435 x 121 x 390 mm (17-1/8" x 4-3/4 " x 15-3/8")
Net Weight:	6.1 kg (13 lbs. 7 oz.)
Shipping Weight:	7.1kg (15.7 lbs)

WARNING

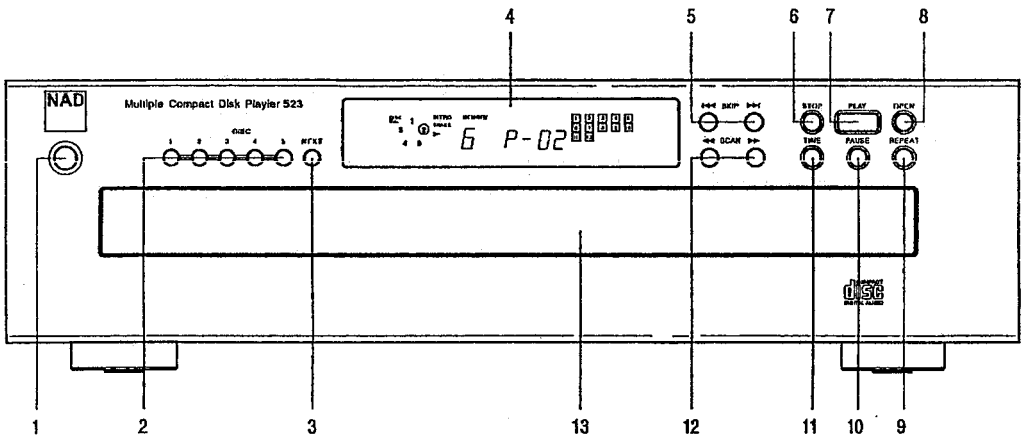
Before Transporting the unit:

1. Take all the discs from the tray.
2. Turn off the power.
3. While pressing "Disc 1" button, turn the power on.
4. Display will show "Poff" and then "00". "00" indicates that the CD mechanism chassis is located at the upper position.
5. After confirming that "00" is on the display, turn off the power and disconnect from the mains.

FRONT PANEL CONTROLS / REAR PANEL CONNECTIONS

WARNING:TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

FRONT PANEL CONTROLS

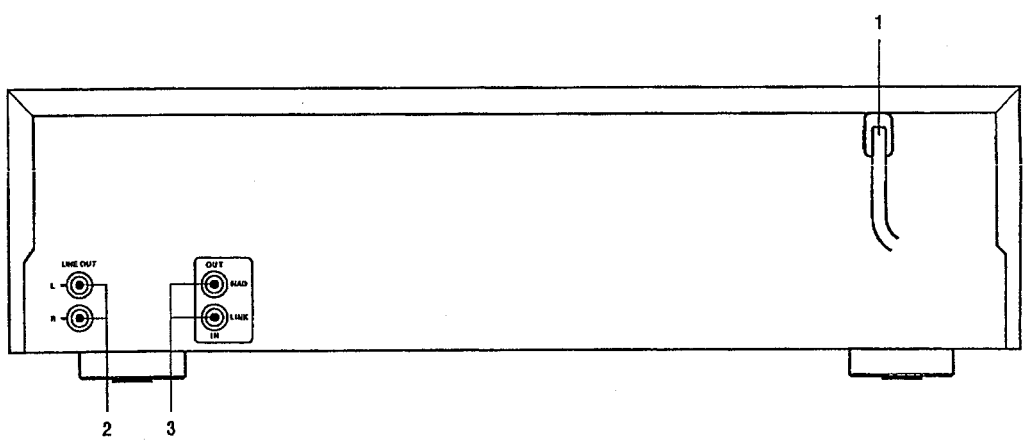


1. POWER
2. DISC1 TO 5
3. NEXT
4. DISPLAY
5. SKIP
6. STOP
7. PLAY
8. OPEN
9. REPEAT
10. PAUSE
11. TIME DISPLAY SELECTOR
12. SCAN
13. DRAWER

The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

REAR PANEL CONNECTIONS



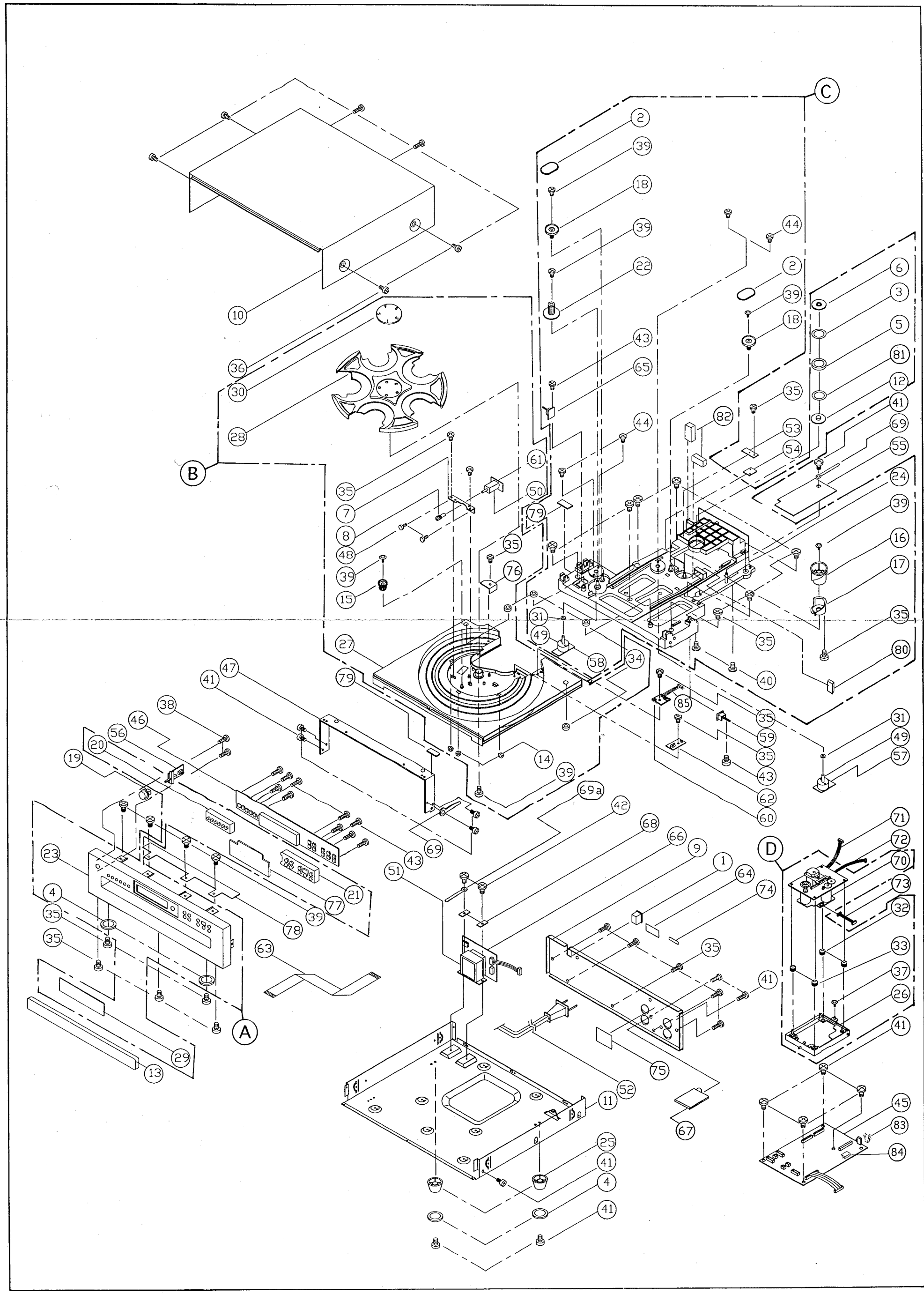
1. AC LINE CORD
2. LINE OUTPUT
3. NAD LINK IN/OUT

EXPLODED VIEW PARTS LIST

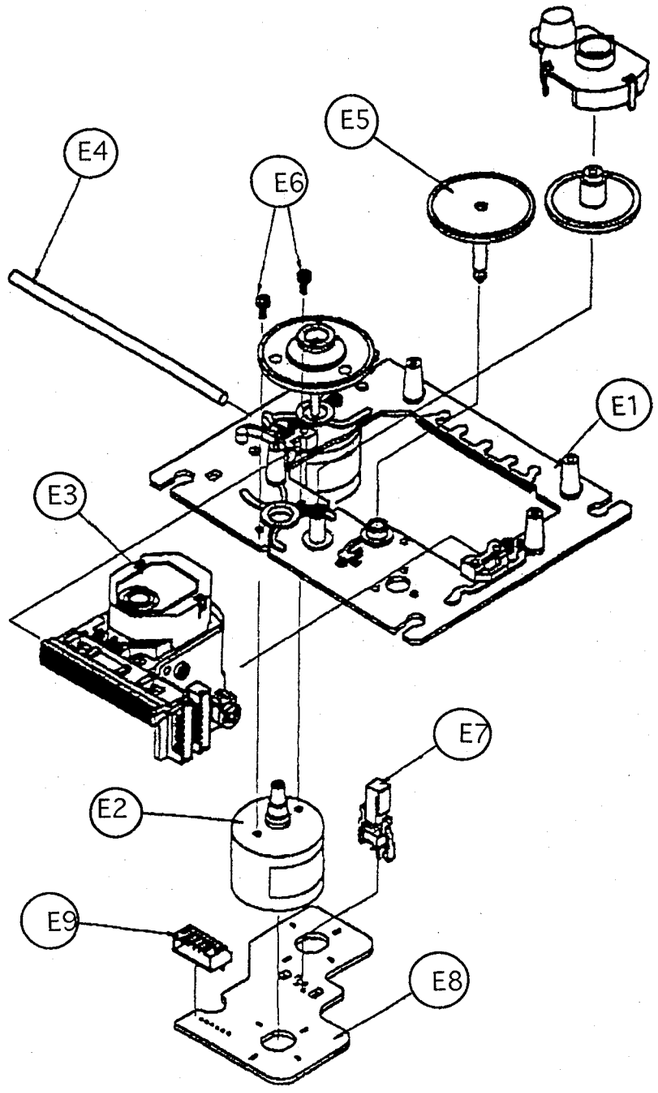
REF.NO.	PART NO.	DESCRIPTION
A	**FRONT PANEL ASS'Y**	
A-4	EVA0330601	EVA
A-19	PT0310602	POWER BUTTON
A-20	PT0310704	DISC NO SWITCH BANK
A-21	PT0310705	PLAY SWITCH BANK
A-23	PT0330002661	FRONT PANEL
A-29	PVC03ONK01	DISPLAY LENS
A-38	SC0308PBZI	SCREW (POWER SW)
A-43	SC2607PBZI	SCREW
A-77	PVC03ONK04	DISPLAY FILTER
B	**SLIDE HOLDER ASS'Y**	
B-7	MT0304401	HOLDER PLATE
B-8	MT0305402	WORM GEAR
B-14	PT0303001	ROLLER
B-15	PT0305408	DRIVEN GEAR
B-27	PT03310021	SLIDE HOLDER
B-28	PT0331103	DISC LOAD
B-30	PVC03ONK03	TURN TABLE-DISC NO.
B-34	RU0304302	STOPPER
B-35	SC0306RBZI	SCREW
B-39	SC0308MBZI	SCREW
B-48	SC0203RIBI	SCREW
B-50	MEFF130SH11340	MOTOR
B-76	MT0304403	RETAINER
C	**CABINET ASS'Y**	
C-2	BE371818	BELT
C-3	EVA0104402	EVA
C-5	MAG0104301	MAGNET
C-6	MT0104450	HOLDER
C-12	PT0104313	DISC HOLDER
C-16	PT0305410	CAM (UPPER)
C-17	PT0305411	CAM (LOWER)
C-18	PT0309503	DRIVEN PULLEY
C-22	PT0312003	DRIVEN GEAR
C-24	PT0330203	CABINET
C-31	P0109502	MOTOR PULLEY
C-34	RU0304302	STOPPER
C-35	SC0306RBZI	SCREW
C-39	SC0308MBZI	SCREW
C-40	SC0308WAZI	SCREW (CD MECHA HOLDER)
C-43	SC2607PBZI	SCREW
C-44	SC2607RINI	SCREW
C-49	ME7E6T7	MOTOR, Chucking, Loading
C-79	NM0331101	FELT
C-80	NM0331102	FELT
C-81	NM0331103	FELT
C-82	EVA0330701	EVA CUSHION
D	**MECHANISM ASS'Y**	
D-26	PT0330802	CUSHION CHASSIS
D-32	RU0130709	CUSHION RUBBER B
D-33	RU0130708	CUSHION RUBBER A
D-37	SC0306W10BZI	SCREW
D-70	CMKSM-2101BDM	CD MECHANISM ASS'Y
1	BAF2271	POWER CABLE HOLDER
4	EVA0330601	EVA
9*AH	MT03204011	REAR PANEL <AH>
9*CB	MT03204012	REAR PANEL <C,B1>
10	MT0330102	TOP COVER
11	MT0330303	BOTTOM CHASSIS
13	PT030290566	TRAY PANEL
25	PT0330601	STAND
35	SC0306RBZI	SCREW
36	SC0306WBBI	SCREW (TOP COVER)
39	SC0308MBZI	SCREW (FRONT PANEL TOP)
41	SC0310RBZI	SCREW (REAR FOOT)
42	SC0408RBZI	SCREW (TRANS)
45	TWPC96C007B02	MAIN P.C. B. ASS'Y
46*AH	TWPC96C020B02	FRONT P.C.B. ASS'Y <AH>
46*CB	TWPC96C020B01	FRONT P.C.B. ASS'Y <C,B1>
47	MT0304402	FRAME
⚠ 51*AH	TF54952201UL	TRANSFORMER <AH>
⚠ 51*CB	TF54952301EU	TRANSFORMER <C,B1>
⚠ 52*AH	PW12200UC01	AC POWER CORD <AH>
⚠ 52*C	PW32200EU02	AC POWER CORD <C>
⚠ 52*B1	PW42200SAA01	AC POWER CORD <B1>
53	TWPC96C018B01	DISC SENSOR (XMT) P.C.B. ASS'Y
54	TWPC96C017B01	DISC SENSOR (RCV) P.C.B. ASS'Y
55	PC96C019B01	PROTECTION P.C.B.
56	TWPC96C009B02	POWER SWITCH P.C.B ASS'Y <AH>
	TWPC96C009B01	POWER SWITCH P.C.B ASS'Y <C,B1>
57	TWPC96C010B01	CHUCKING MOTOR P.C.B ASS'Y
58	TWPC96C012B01	LOADING MOTOR P.C.B ASS'Y
59	TWPC96C011B01	CHUCKING SWITCH P.C.B ASS'Y
60	TWPC96C014B01	STOP SENSOR P.C.B. ASS'Y
61	TWPC96C015B01	ROULETTE MOTOR P.C.B. ASS'Y
62	TWPC96C016B01	POSITION SENSOR P.C.B ASS'Y
63	FFC2912505001	FLAT CABLE 29P
64	LAC22NAD03	SERIAL NO. LABEL
65	TWPC96C013B01	LOADING SWITCH P.C.B. ASS'Y
66	TWPC96C008B02	POWER TRANS P.C.B. ASS'Y <AH>
	TWPC96C008B01	POWER TRANS P.C.B. ASS'Y <C,B1>
67	TWPC96C027B01	NAD LINK P.C. BOARD ASS'Y
68	MT0104452	HOLDER PLATE
69	BAGL-70L	WIRE CLIP
69-a	BAGL-70L	WIRE CLIP <C,B1>
71	CN0820001502	8 PIN CONNECTOR W/W
72	CN0820001503	8 PIN CONNECTOR W/W
73	CN0620001802	6 PIN CONNECTOR W/W
74	LAC63ONK03	MANFACTURE DATE LABEL (REAR)
75	LAC57ONK01	LASER CAUTION LABEL (REAR PANEL INSIDE)
78	MT0304701	SHIELD PLATE
79	NM0331101	FELT
83	MT0101802	SHIELD PLATE
84	MT0101805	EARTHED METAL
85	CN0620002301	CONNECTOR W/W

NOTE: <AH> : U.S.A., Canadian model only
<B1>: Australian model only
<C> : European model only

EXPLODED VIEW

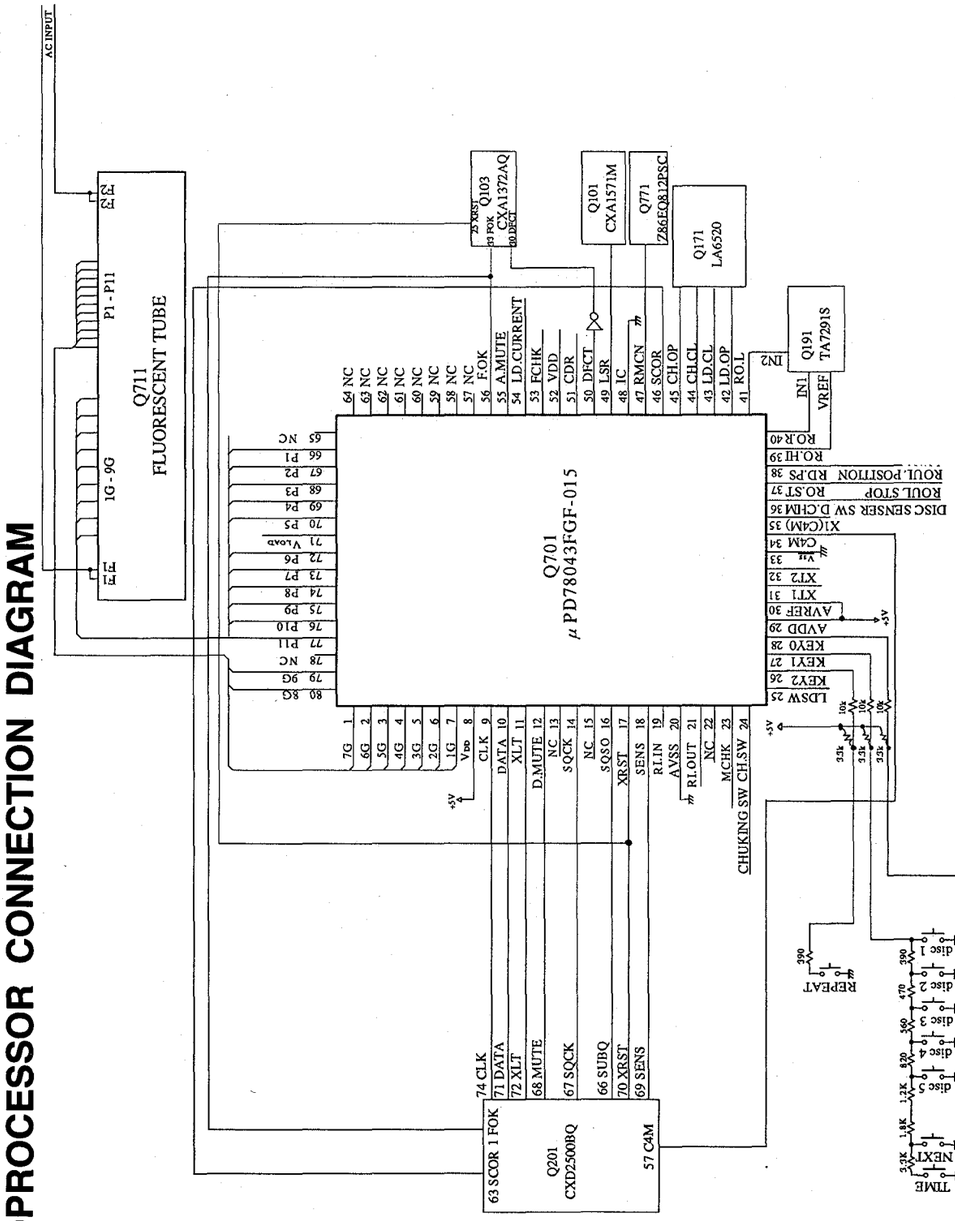


CD MECHANISM-EXPLODED VIEW / PARTS LIST



REF. NO.	PART NO.	DESCRIPTION
E1	X2625-870-(1)	Motor Chassis Ass'y (MB)(RP)
E2	X2625-132-(1)	Motor Gear Ass'y (MB)
E3	8848-137-(11) or 8848-337-(11)	Pick-Up Ass'y KSS-210B(RP) or KSS-212B(RP)
E4	2626-908-(01)	Sled Shaft
E5	2625-188-(02)	Gear (A)
E6		Screw (+) P2x3 (Not supplied)
E7	1572-085-(12)	Leaf Switch
E8	1639-678-(13)	Motor (6P) (S) PCB
E9	1564-722-(11)	Connector Pin 6P

MICROPROCESSOR CONNECTION DIAGRAM



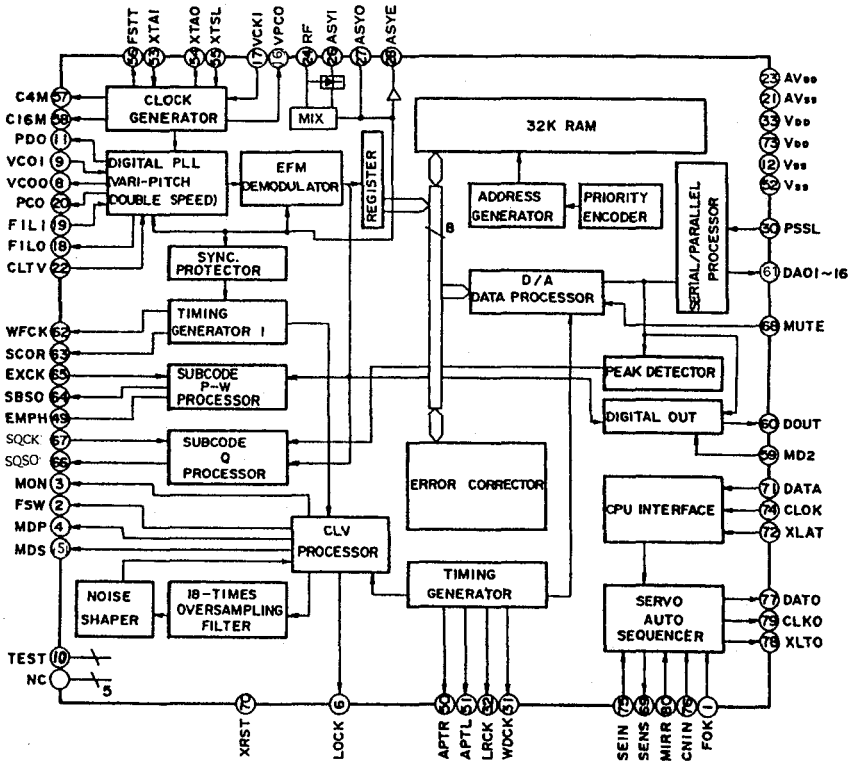
MICROPROCESSOR DESCRIPTIONS

Q701: μPD78043FGF-015

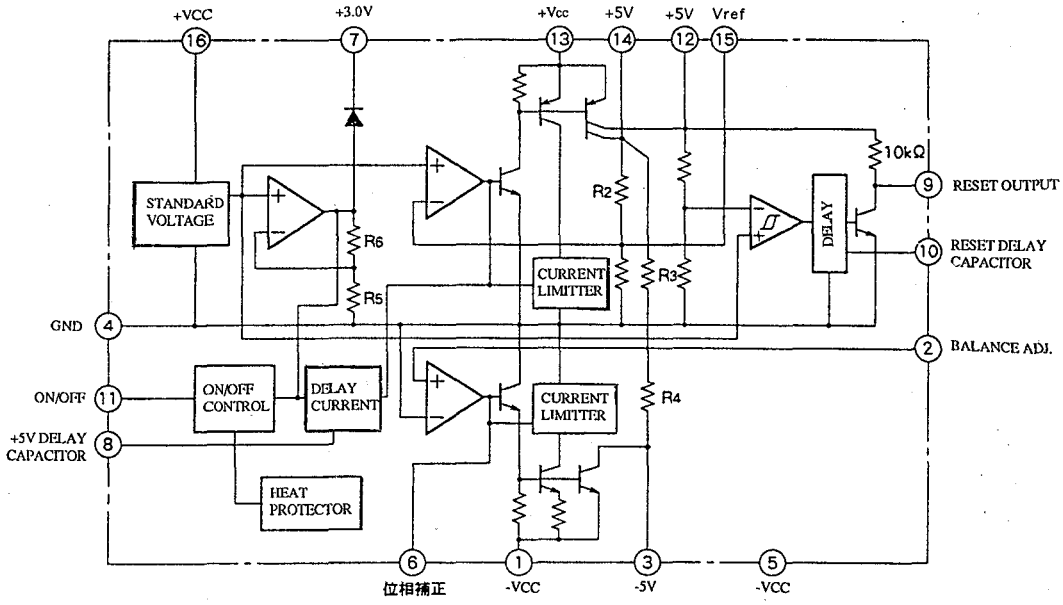
Pin No.	Function	I/O	Description
1	7G	O	Grid output for fluorscent indicator tube.
2	6G	O	
3	5G	O	
4	4G	O	
5	3G	O	
6	2G	O	
7	1G	O	
8	VDD		Voltage supply pin for digital (+5V)
9	CLK	O	Serial transfer clock output terminal of command to the signal processor IC.
10	DATA	O	Serial data of command of signal processing IC
11	XLT	O	Command to signal processing IC
12	D.MUTE	O	Muting signal to signal processing IC
13	NC		Not used.
14	SQCK	O	Serial transfer clock of sub code Q to signal processing IC
15	NC		Not used.
16	SQSO	I	Serial transfer data of sub code Q from signal processing IC
17	XRST	I	Reset signal
18	SENS	I	Sense signal from signal processing IC
19	RI.IN	I	Not used
20	AVss		Ground pin for A/D converter
21	RI.OUT	O	Not used
22	NC		Not used
23	MCHK	I	Initializing input of operation mode
24	CH.SW	I	Chucking (UP or DOWN) input port
25	LD.SW	I	Loading (OPEN or CLOSE) input port
26	KEY2	I	A/D port for key input
27	KEY1	I	A/D port for key input
28	KEY0	I	A/D port for key input
29	AVdd	I	Voltage supply pin for A/D converter (+5V)
30	AVref	I	Reference voltage supply pin for A/D converter (+5V)
31	XT1	I	Not used
32	XT2		Not used
33	Vss		Ground pin
34	X1(C4M)	I	System clock oscillation input
35	X2		Not used
36	D.CHK	I	Disc checking input port
37	RO.ST	I	Carousel stop position detector photo interrupter input
38	RO.PS	I	Carousel disc position detector photo interrupter input
39	RO.HI	O	Carousel high speed rotation signal
40	RO.R	O	Carousel rotation control signal
41	RO.L	O	Carousel rotation control signal
42	LD.OP	O	Tray loading control signal
43	LD.CL	O	Tray loading control signal
44	CH.CL	O	Chucking control signal (UP)
45	CH.OP	O	Chucking control signal (DOWN)
46	SCOR	I	Synchronizing signal detector of sub code sink
47	RMCN	I	Remote control signal input port
48	IC		Ground
49	LSR	O	Laser diode control signal L:ON
50	DFCT	O	Defect control signal
51	CDR		Not used
52	VDD		Voltage supply pin for digital (+5V)
53	FCHK	I	Initializing input of operation mode
54	LD.CURRENT	I	Detective signal of overcurrent for loading motor
55	A.MUTE	O	Audio Mute
56	FOK	I	Focus OK signal
57	NC	O	Not used
58	NC	O	Not used
59	NC	O	Not used
60	NC	O	Not used
61	NC	O	Not used
62	NC	O	Not used
63	NC	O	Not used
64	NC	O	Not used
65	NC	O	Not used
66	P1	O	Segment output for fluorescent indicator tube.
67	P2	O	Segment output for fluorescent indicator tube.
68	P3	O	Segment output for fluorescent indicator tube.
69	P4	O	Segment output for fluorescent indicator tube.
70	P5	O	Segment output for fluorescent indicator tube.
71	VLOAD	I	Pull-down resistor connection pin of controller and driver of FL.
72	P6	O	Segment output for fluorescent indicator tube.
73	P7	O	Segment output for fluorescent indicator tube.
74	P8	O	Segment output for fluorescent indicator tube.
75	P9	O	Segment output for fluorescent indicator tube.
76	P10	O	Segment output for fluorescent indicator tube.
77	P11	O	Segment output for fluorescent indicator tube.
78	NC		Not used
79	9G	O	Grid output for fluorescent indicator tube.
80	8G	O	Grid output for fluorescent indicator tube.

IC BLOCK DIAGRAMS AND DESCRIPTIONS

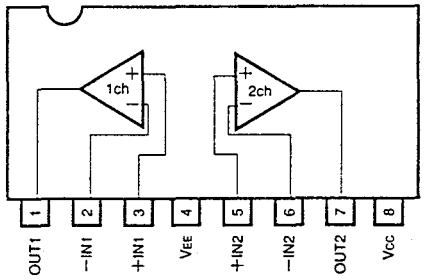
Q201 : CXD2500BQ (Digital Signal Processor)



Q901 : M5294P (Voltage Regulator)



Q401, Q402 : BA15532 (Buffer & Active Filter)



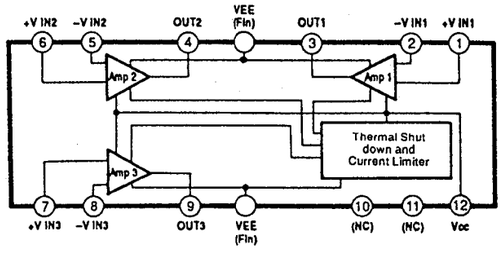
Q201 : CXD2500BQ

NO.	SYMBOL	I/O	DESCRIPTION
1	FOK	I	Foucs Ok input
2	FSW	O	Output filter changeover output for spindle motor
3	MON	O	Spindle motor control output
4	MDP	O	Spindle motor servo control
5	MDS	O	Spindle motor servo control
6	LOCK	O	H when GFS is the high level
7	NC		
8	VCOO	O	Oscillation circuit output for analog EFM PLL.
9	VCOI	I	Oscillation circuit input for analog EFM PLL. (8.6436MHz)
10	TEST	I	Test terminal
11	PDO	O	Charge pump output analog EFM PLL
12	Vss		Ground terminal
13-15	NC		
16	VPCO	O	PLL charge pump output for variable pitch
17	VCKI	I	Clock input for variable pitch from VCO (16.9344MHz)
18	FILO	O	Filter output for master PLL.
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output of master PLL
21	AVss		Analog ground
22	CLTV	I	VCO control voltage input for master
23	AVDD		Analog section power supply (+5V)
24	RF	I	EFM signal input
25	BIAS	I	Asymmetry circuit constant current input
26	ASYI	I	Asymmetry comparator voltage input
27	ASYO	O	EFM full swing output
28	ASYE	I	Asymmetry control circuit
29	NC		
30	PSSL	I	Audio data output mode changeover input Serial data at L and paraller data at H.
31	WDCK	O	D/A interface for 48 bits slot. Word clock f=2Fs.
32	LRCK	O	D/A interface for 48 bits slot. LR clock f=Fs.
33	VDD		Power supply terminal (+5V)
34-49		O	Data output terminals

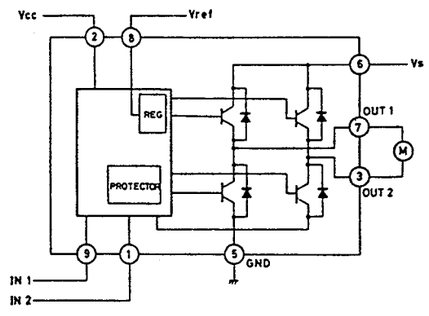
			PSSL=1	PSSL=0
34	DA16	O	DA16	Serial data of 48 bits slot
35	DA15	O	DA15	Bit clock of 48 bits slot
36	DA14	O	DA14	Serial data of 64 bits slot
37	DA13	O	DA13	Bit clock of 64 bits slot
38	DA12	O	DA12	LR clock of 64 bits slot
39	DA11	O	DA11	GTOP output
40	DA10	O	DA10	XUGF output
41	DA09	O	DA09	XPLCK output

NO.	SYMBOL	I/O	DESCRIPTION
42	DA08	O	DA08 GFS output
43	DA07	O	DA07 RFCK output
44	DA06	O	DA06 C2P0 output
45	DA05	O	DA05 XRAOF output
46	DA04	O	DA04 MNT 3 output
47	DA03	O	DA03 MNT 2 output
48	DA02	O	DA02 MNT 1 output
49	DA01	O	DA01 MNT 0 output
50	APTR	O	Control output for aperture correction. H when R ch.
51	APTL	O	Control output for aperture correction. H when L ch.
52	Vss		Ground terminal
53	XTAI	I	Crystal oscillation circuit input of 16.9344MHz or 33.8688MHz input.
54	XTAO	O	Crystal oscillation circuit output of 16.9344MHz.
55	XTSL	I	Crystal selection input terminal. L when 16.9344MHz. H when 33.8688MHz.
56	FSTT	O	2/3 divided output of pins 53 and 54.
57	C4M	O	4.2336 MHz output
58	C16M	O	16.9344 MHz output
59	MD2	I	Digital output control input. On at high level.
60	DOUT	O	Digital output
61	EMPH	O	Emphasis control output. Active high.
62	WFCK	O	Write frame clock output
63	SCOR	O	Sub-code detection output. H when is detected S0 or S1.
64	SBSO	O	Serial output of sub-code (P~W)
65	EXCK	I	Clock input for read out SBSO.
66	SQSO	O	Sub Q 80 bits, PCM peak, and level data 16 bits output.
67	SQCK	I	Clock input for read out SQSO
68	MUTE	I	Muting control input. Active H.
69	SENS		Sens output. Output to the microprocessor
70	XRST	I	System reset. Reset at the low level.
71	DATA	I	Serial data input from the microprocessor.
72	XLAT	I	Latch input from the microprocessor. Latch the serial data at the trailing.
73	VDD		Power supply treminal (+5V)
74	CLOK	I	Serial data transfer clock input from microprocessor
75	SEIN	I	Sens input from SSP
76	CNIN	I	Track jump numbers count signal input
77	DATO	O	Serial data output to SSP
78	XLTO	O	Serial data latch output to SSP. Latch at trailing.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input

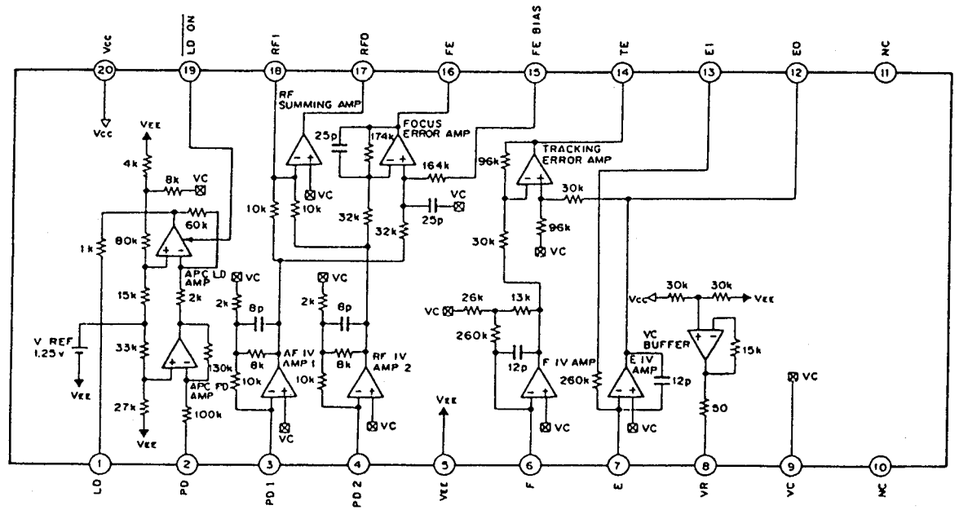
Q151, Q171 : LA6520 (Power OP-Amp)



Q191 : TA-7291S (Motor Driver)



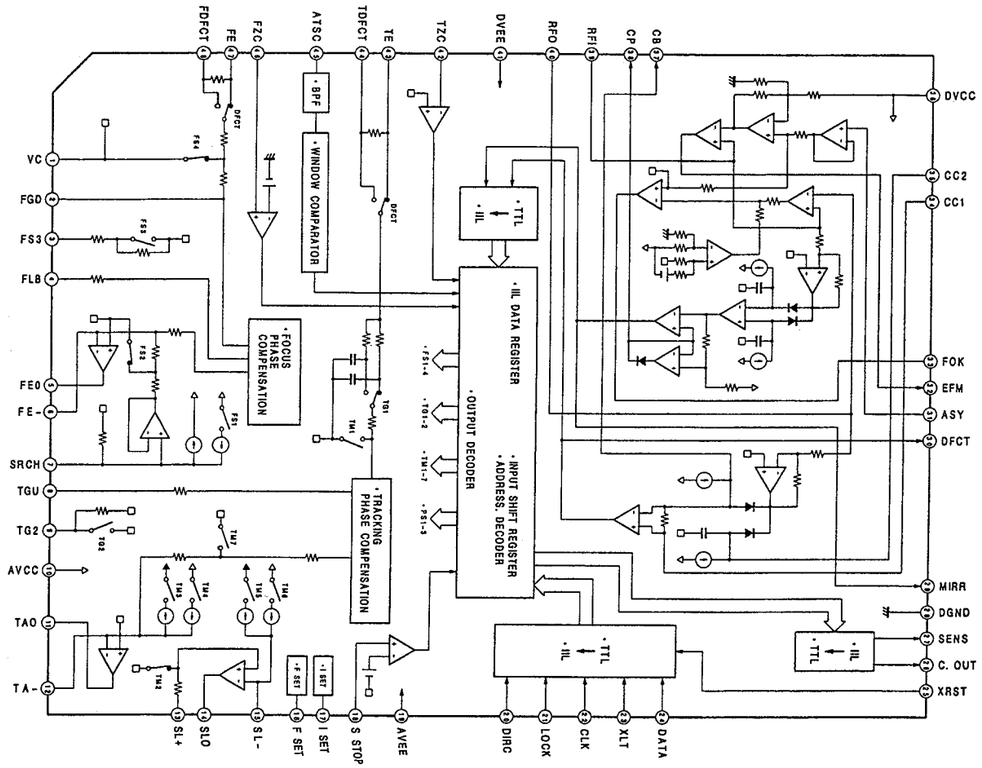
Q101 : CXA1571M (RF Amp.)



Q101 : CXA1571M

Pin No.	Symbol	I/O	Description
1	LD	O	Output terminal of APC amplifier.
2	PD	I	Input terminal of APC amplifier.
3	PD1	I	Inversion input terminal for RF I-V amplifier. Connect to photo diode A+C.
4	PD2	I	Inversion input terminal for RF I-V amplifier. Connect to photo diode B+D.
5	VEE	-	GND
6	F	I	Inversion input terminal for F I-V amplifier. Connect to photo diode F.
7	E	I	Inversion input terminal for E I-V amplifier. Connect to photo diode E.
8	VR	O	DC voltage output of (Vcc+V_{EE})/2.
9	VC	I	Middle point voltage input terminal.
10	NC	-	non connect
11	NC	-	non connect
12	EO	O	Monitor output terminal for I-V amplifier E.
13	EI	-	Gain adjustment terminal for I-V amplifier E.
14	TE	O	Tracking error amplifier output terminal. The signal E-F is output from this terminal.
15	FE-BIAS	I	Bias adjustment terminal for non-inversion side of focus error amplifier.
16	FE	O	Focus error amplifier output terminal.
17	RFO	O	RF amplifier output terminal.
18	RFI	I	Inversion input terminal of RF amplifier.
19	LD-ON	I	Change-over terminal for APC amplifier.
20	Vcc		

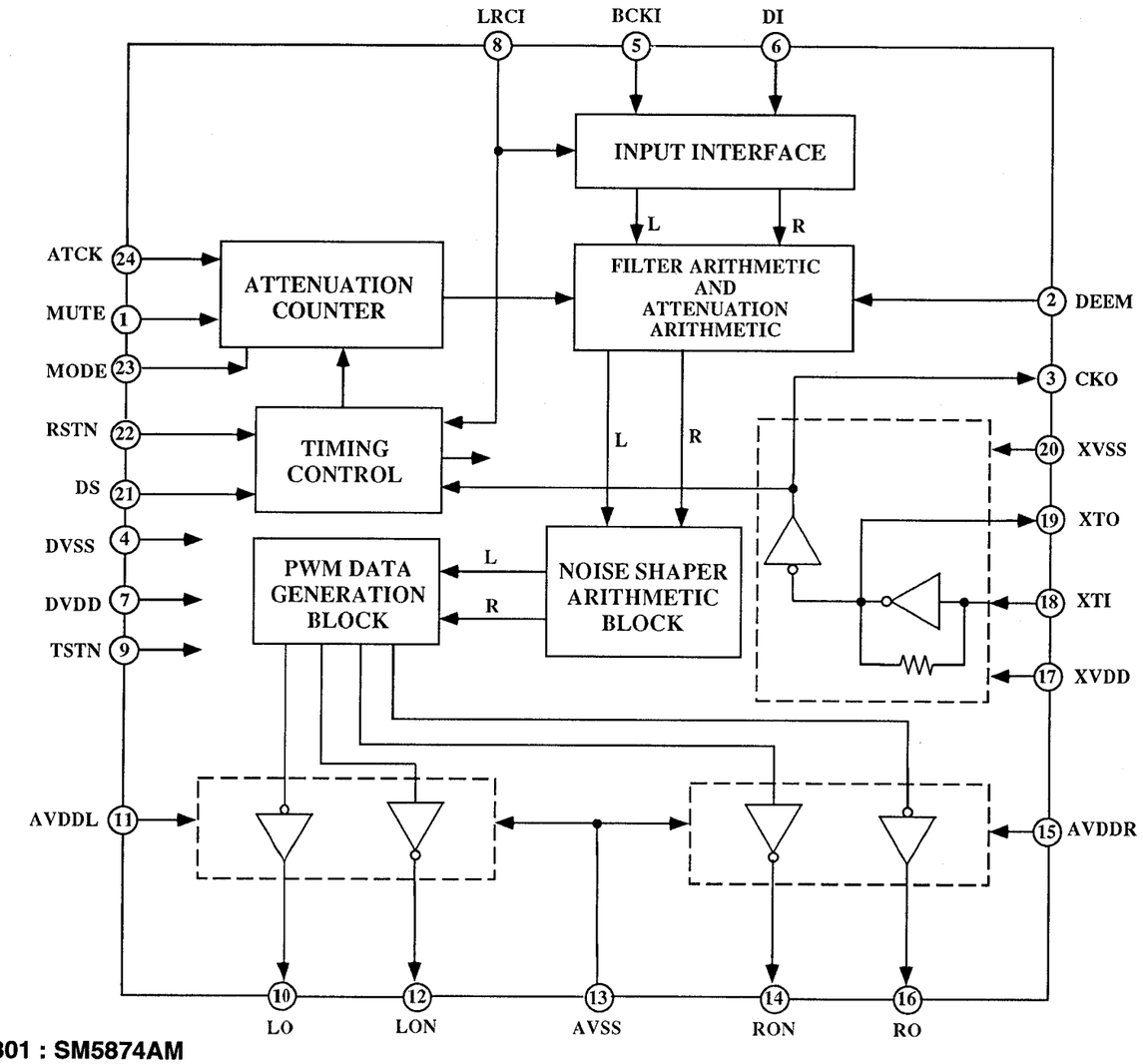
Q103 : CXA1372AQ (Servo Signal Processor)



Q103 : CXA1372AQ

PIN NO.	SYMBOL	I/O	DESCRIPTION
1	VC	I	Mid-point voltage input terminal.
2	FGD	I	Connect the capacitor between FS3 and this pin when the high frequency gain focus servo is dropped.
3	FS3	I	Focus servo high frequency gain changeover input terminal.
4	FLB	I	Input terminal for the low frequency boost of focus servo.
5	FEO	O	Focus drive output terminal.
6	FE-	I	Inversion input terminal of focus amplifier.
7	SRCH	I	Time constant terminal to make the focus search waveform.
8	TGU	I	Tracking high frequency changeover input terminal.
9	TG2	I	Tracking high frequency changeover input terminal.
11	TAO	O	Tracking drive output terminal.
12	TA-	I	Inversion input terminal of tracking amplifier.
13	SL+	I	No-inversion input terminal of sled amplifier.
14	SLO	O	Sled drive output terminal.
15	SL-	I	Inversion input terminal of sled amplifier.
16	FSET	I	Peak setting input of phase correction of focus tracking.
17	ISET	I	This terminal is flowed the current so that the focus search, tarcking jump, and sled kick height is decided.
18	SSTOP	I	Inner switch selection input terminal.
20	DIRC	I	This terminal is used when track jump.
21	LOCK	I	The sled runaway prevention circuit operates at the low level.
22	CLK	I	Serial data transfer clock input from microprocessor.
23	XLT	I	Latch input terminal for microprocessor.
24	DATA	I	Serial data input terminal for microprocessor.
25	XRST	I	Reset input terminal.Active low.
26	C.OUT	O	Signal output to count the track numbers.
27	SENS	O	This terminal outputs FZC, AS, TZC and SSTOP to according command from the microprocessor.
29	MIRR	O	Mirror comparator output terminal.
30	DFCT	O	Defect comparator output terminal.
31	ASY	I	Auto asymmetry control input terminal.
32	EFM	O	EFM comparator output terminal.
33	FOK	O	Focus OK comparator output terminal.
34	CC1	O	Defect bottom hold output terminal.
35	CC2	I	Defect bottom hold input terminal from CC1.
37	CB	I	Defect bottom hold capacitor connection terminal.
38	CP	I	Mirror hold capacitor connection terminal.
39	RFI	I	RF summing amplifier input terminal.
40	RFO	O	RF summing amplifier output terminal.
42	TZC	I	Tracking zero-cross comparator input terminal.
43	TE	I	Tracking error input terminal.
44	TDFCT	I	Capacitor connection terminal for time constant when defect.
45	ATSC	I	Window comparator input terminal for ATSC detection.
46	FZC	I	Focus zero-cross comparator input terminal.
47	FE	I	Focus error input terminal.
48	FDFCT	I	Capacitor connection terminal for time constant when defect.

Q301 : SM5874AM (D/A Converter)



Q301 : SM5874AM

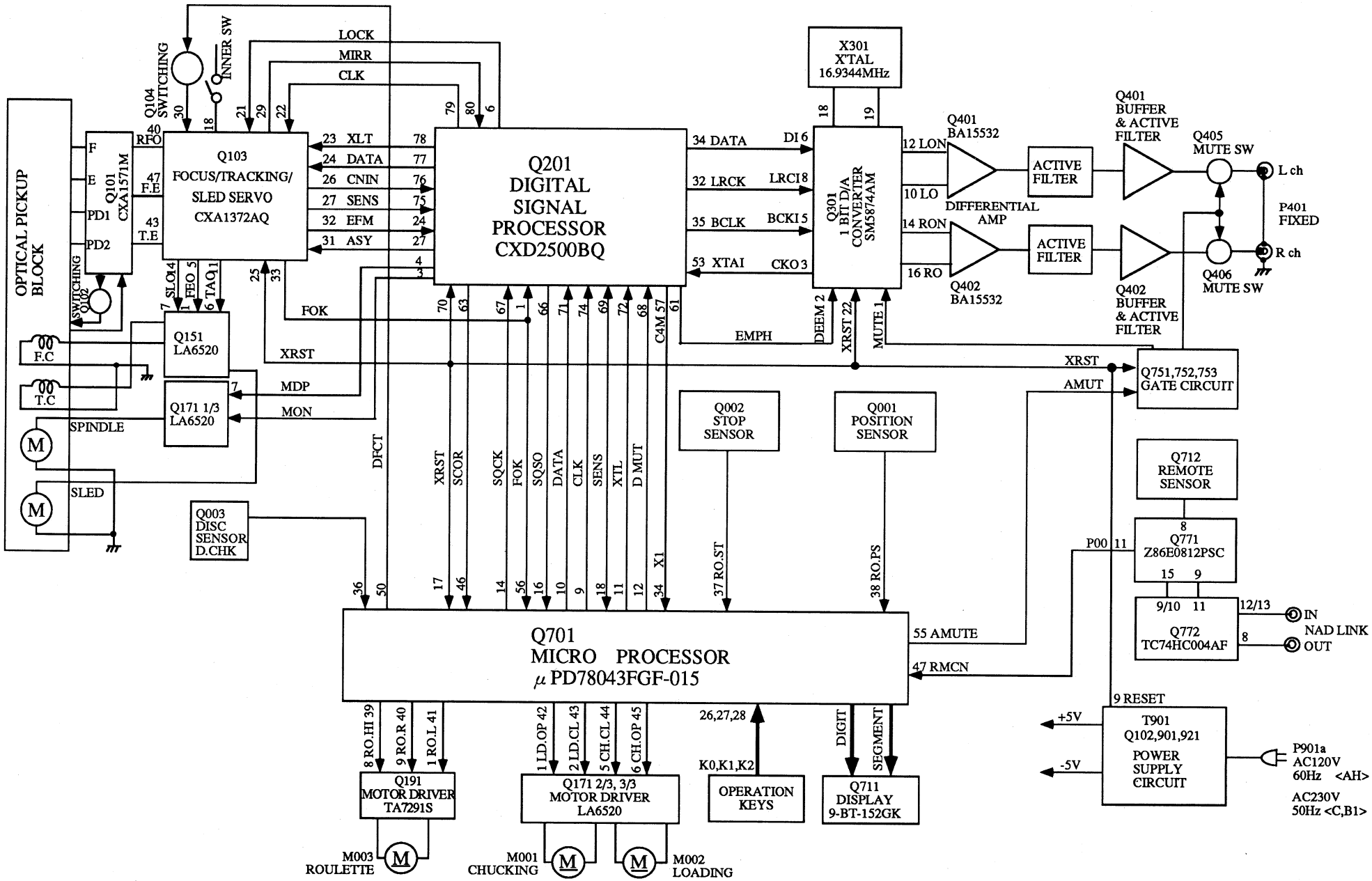
Pin No.	Symbol	I/O	Description
1	MUTE	Ip	MODE=H:Muting control pin
			MODE=L:Attenuator level control pin
2	DEEM	Ip	De-emphasis control pin. On at high level.
3	CKO	O	Clock output pin: 16.9344MHz
4	DVss	-	Digital supply pin
5	BCKI	Ip	Bit clock input pin
6	DI	Ip	Serial data input pin
7	DVDD	-	Digital supply pin
8	LRCI	Ip	Sampling rate clock input pin (H=Lch/L=Rch)
9	TSTN	Ip	Test input pin
10	LO	O	Analog signal output pin for left channel (+)
11	AVDDL	-	Analog supply
12	LON	O	Analog signal output pin for left channel (-)
13	AVss	-	Analog supply pin
14	RON	O	Analog signal output pin for right channel (-)
15	AVDDR	-	Analog supply pin
16	RO	O	Analog signal output pin for right channel (+)
17	XVDD	-	Supply pin for resonator system
18	XTI	I	Crystal connection or external clock input pin
19	XTO	O	Crystal connection pin
20	XVSS	-	Supply pin for resonator system
21	DS	Ip	Playback speed select pin. Double speed at H
22	RSTN	Ip	Reset pin (Reset at Low).
23	MODE	Ip	Muting/Attenuator mode select pin
24	ATCK	Ip	Attenuator level setting clock

I = Input

Ip = Input w/Pull up resistor

O = Output

BLOCK DIAGRAM



ADJUSTMENT PROCEDURE

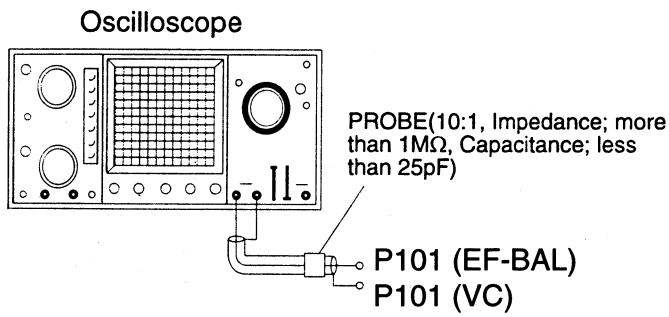
1. Instrument required

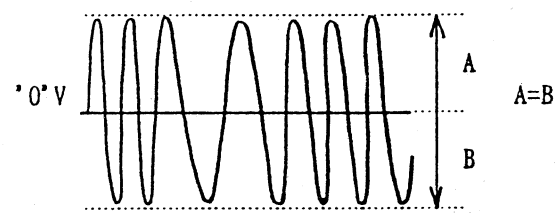
- Oscilloscope (3 or more modes, 100MHz, input select DC range)
- Jitter meter: MJM-631 (MEGURO) or equivalent
- Test disc: A-BEX TCD-785

2. EF Balance Adjustment

(1) Connect the oscilloscope (0.05V/cm,10ms/cm, DC mode) to P101(EF-BAL) and P101(VC).
(2) Push the "POWER" switch to turn "ON" while pushing "FORWARD SKIP" key. (TEST MODE)
(Display information : ADJ)
(3) Insert A-BEX TCD-785 test disc.
(4) Push "PLAY" key to enter the "PLAYBACK" mode.
(5) Push "PAUSE" key to enter the "TRACKING SERVO OFF" mode.
(6) Adjust R109 so that the amplitude above and below the zero DC line becomes equal.
(Amplitude A = Amplitude B)

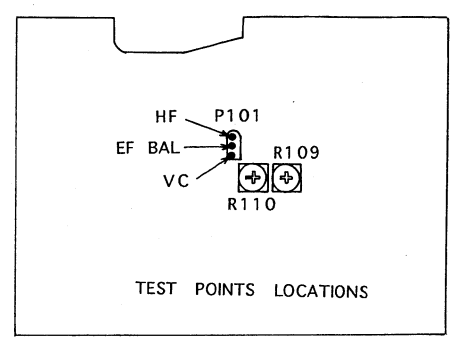
NOTE: Instead of using the DC input of an oscilloscope, you may also use a DC null voltmeter for this alignment.

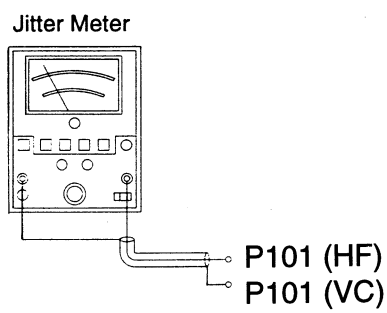


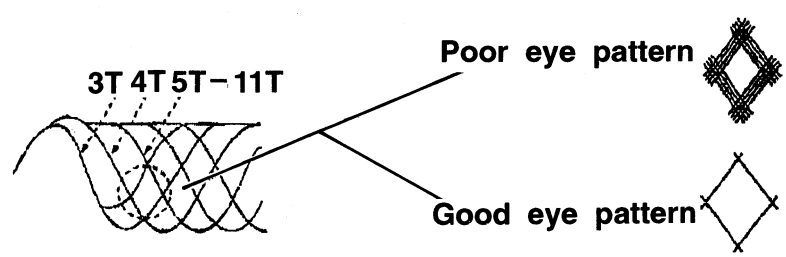


3. Focus Offset Adjustment

(1) In order to cancel the test mode, push the "power" switch to turn "off".
(2) Push the "power" switch again to turn "on".
(3) Connect the Jitter meter (sigma range) to P101(HF) and P101(VC).
(4) Insert A-BEX TCD-785 test disc and place the unit in the Play mode.
(5) Adjust R110 so that the Jitter level becomes minimum level.
If a Jitter meter is not available, then an oscilloscope can be used.
Set for 0.02V/cm and 0.2 μ s/cm.
Adjust for correct eye pattern.

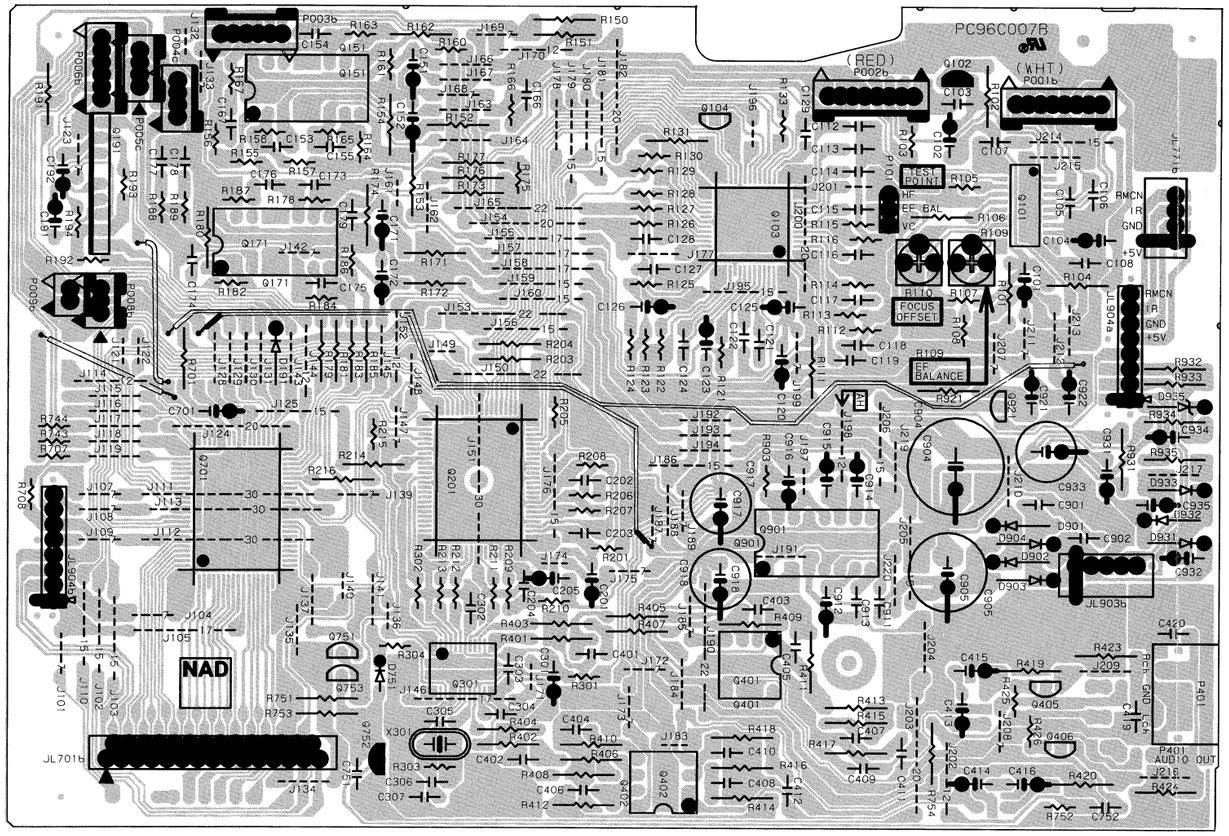




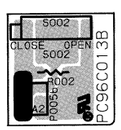


PRINTED CIRCUIT BOARD VIEW

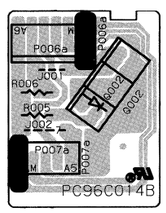
MAIN P.C.B.



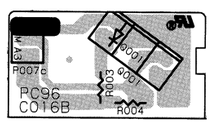
LOADING SWITCH P.C.B.



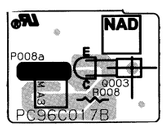
STOP SENSER P.C.B.



POSITION SENSER P.C.B.

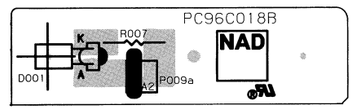


DISC SENSER (RCV) P.C.B.

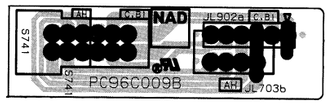


CHUCKING SWITCH P.C.B.

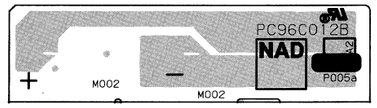
DISC SENSER (XMT) P.C.B.



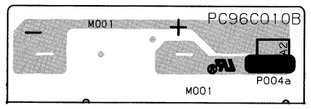
POWER SWITCH P.C.B.



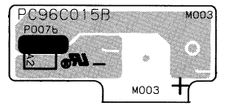
LOADING MOTOR P.C.B.



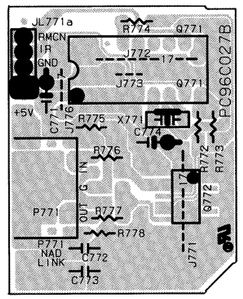
CHUCKING MOTOR P.W.B.



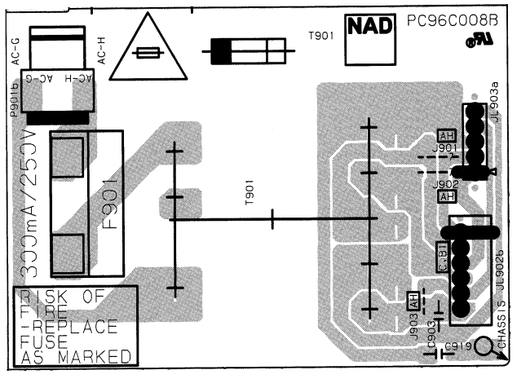
ROULETTE MOTOR P.C.B.



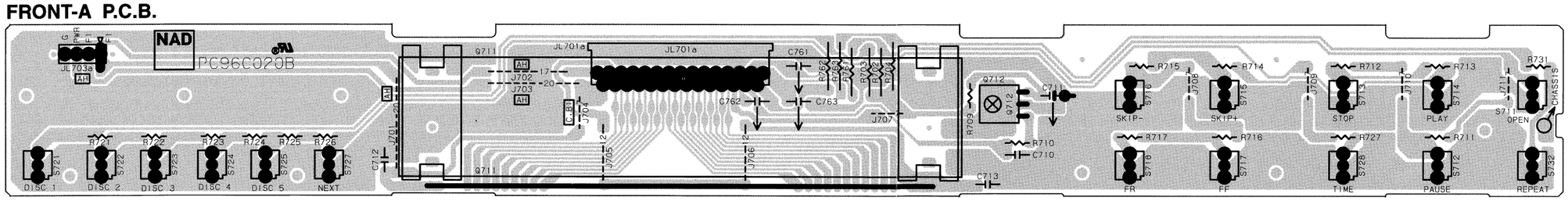
NAD LINK P.C.B.



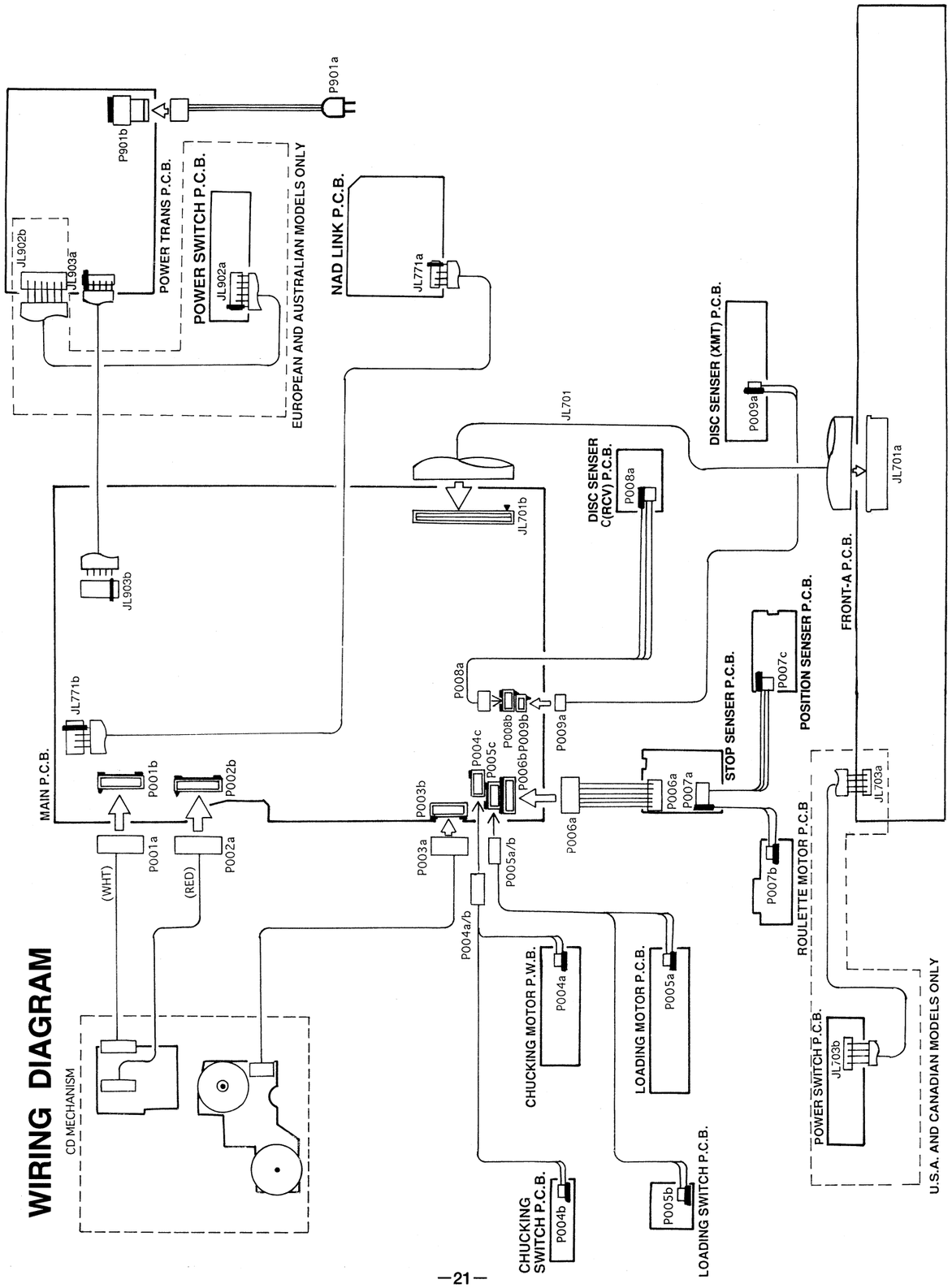
POWER TRANS P.C.B.



FRONT-A P.C.B.



WIRING DIAGRAM



ELECTRICAL PARTS LIST

SYMBOL NO.	PART NAME	PART NO.
45	**MAIN P.C. BOARD ASS'Y**	
	ICs	
Q101	CXA1571M, R.F	ICCXA1571M
Q103	CXA1372AQ, ASP	ICCXA1327AQ
Q151,171	LA6520, Driver	ICLA6520
Q191	TA7291S, Motor+Power	ICTA7291S
Q201	CXD2500BQ, DSP	ICCXD2500BQ
Q301	SM5874AM, D.F+1BIT DAC	ICSM5874AM
Q401,402	NJM4565DD, OP AMP	ICNJM4565DD
Q701	μ PD78043FGF-015, Micon IC	ICUPD78043
Q901	M5294P, Mute+Power	ICM5294P
	TRANSISTORS	
Q102	2SA950Y	TR2SA950T
Q104,751	DTC114YS	TRDTC114YST
Q405,406	2SC2878(B)	TR2SC2878BT
Q741	2SC1815(GR)	TR2SC1815GRT
Q752	DTA124ES	TRDTA124EST
Q753	DTC124ES	TRDTC124EST
Q921	2SD1863(Q) or (R)	TR2SD1863QT or TR2SD1863RT
	DIODES	
D191	Diode 1S2473	DI1S2473T5
D701,751	Diode 1SS133	DI1SS133T5
⚠ D901-904, 931-933	Diode 1N4002	DI1N4002T5
D934	Zener Diode HZ27-2	DIZDHZ27-2T5
D935	Zener Diode HZ5B2	DIZDHZ5B2T5
	CAPACITORS	
C101,102,120, 125,201,301, 413-416,701	ELECT CAP. 100uF/10V	EC10710TSU
C104	ELECT CAP. 33uF/16V	EC33616TSU
C107,108,116, 119,121,124, 127,176-178, 302-305,752, 901,902	TF CAP. 104=0.1uF (J)	MC10450TTF
C112,113,173, 204	TF CAP. 103=10nF(J)	MC10350TTF
C117,122,129	TF CAP. 333=33nF(J)	MC33350TTF
C123	ELECT CAP. 4.7uF/50V	EC47550TSU
C126	ELECT CAP. 47uF/10V	EC47610TSU
C151,152,171, 172,931	ELECT CAP. 220uF/16V	EC22716TSU
C191,192	ELECT CAP. 100uF/16V	EC10716TSU
C202	TF CAP. 473=47nF(J)	MC47350TTF
C205	ELECT CAP. 0.47uF/50V	EC47450TSU
C401,402	NPC CAP. 471=470pF(J)	MC471100TNP
C403-406	NPC CAP. 101=100pF (J)	MC101100TNP
C407-410	NPC CAP. 152=1.5NF (J)	MC152100TNP
C411,C412	NPC CAP 103=0.01uF (J)	MC103100TNP
C904	ELECT CAP. 4700uF/16V	EC47816FSU
C905	ELECT CAP. 2200uF/16V	EC22816FSU
C912	ELECT CAP. 470uF/6.3V	EC47706TSU
C913	TF CAP. 224=0.22uF(J)	MC22450TTF
C914,916	ELECT CAP. 2.2uF/50V	EC22550TSU
C915,921,934	ELECT CAP. 10uF/50V	EC10650TSU
C917,918	ELECT CAP. 470uF/10V	EC47710TSU
C922	ELECT CAP. 220uF/6.3V	EC22706TSU
C932,933,935	ELECT CAP. 220uF/35V	EC22735TM
	RESISTORS	
⚠ R150-152,171, 172,191-902	Fuse Resistor 2.2(FR)	RF02214T5
X301	CRYSTAL 16.9344MHz	XTM16934X1
P101	TEST PIN	TE512500301

SYMBOL NO.	PART NAME	PART NO.
	MISCELLANEOUS	
JL701a	FFCN 29P (180)	FCN1S1252901
JL771b	CONNECTOR 4P	TE712500431
JL903b	CONNECTOR 5P	TE712500531
P001b/P002b	CONNECTOR 8P	TE612000821
P003b	CONNECTOR 6P	TE612000621
P004c,005c	CONNECTOR 4P	TE612000411
P006b	CONNECTOR 6P	TE612000611
P008b	CONNECTOR 3P	TE612000311
P009b	CONNECTOR 2P	TE612000211
JL904a/904b	WIRE HOLDER 8P	TE812500811
P401	PIN JACK 2P LCH.RCH	RJ102A-09
53	**DISC SENSER (XMT) P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
D001	PHOTO LED (GL450)	DIPHGL450
P009a	CONNECTOR W/W	CN0220005001
54	**DISC SENSER P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
P008a	CONNECTOR W/W 3P	CN0320003001
Q003	PHOTO TRANSISTOR(PT491F)	TRPT491F
56	**POWER SWITCH P.C.BOARD ASS'Y<AH>**	
	MISCELLANEOUS	
JL703b	CONNECTOR 4P SMK	TE712500431
S741	⚠ POWER SWITCH 2P	SWSPUP122
56	**POWER SWITCH P.C.BOARD ASS'Y<C,B1>**	
	MISCELLANEOUS	
JL902a	WIRE HOLDER 6P	TE812500611
S741	POWER SWITCH 4P	SWSPUP124
58	**LOADING MOTOR P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
P005a	CONNECTOR W/W 2P	CN0420003401
59	**CHUCKING SWITCH P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
P004b	CONNECTOR W/W 2P (200mm) (TO PC96C010)	CN0420002101
S001	SWITCH	SWSSCF21
60	**STOP SENSER P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
P006a	CONNECTOR W/W 6P	CN0620002301
Q002	PHOTO COUPLER	DIPH574
61	**ROULETTE MOTOR P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
P007b	CONNECTOR W/W 2P	CN0520002001
62	**POSITION SENSER P.C.BOARD ASS'Y**	
	MISCELLANEOUS	
Q001	PHOTO COUPLER	DIPH574
64	**FRONT P.C.BOARD ASS'Y**	
	CAPACITORS	
C711	ELECT 47UF/10V	EC47610TSU
C712,713	TF CAP. 104	MC10450TTF

SYMBOL NO.	PART NAME	PART NO.
	MISCELLANEOUS	
JL701a	FFCN 29P (90)	FCN1R1252901
JL703a	WIRE HOLDER 4P <AH>	TE812500411
Q711	FL DISPLAY	FLHCD604
Q712	REMOTE RECEIVER (37.9kHz)	IRPIC-12043TH2
S711-718, 721-725, 727,728, 732	SWITCH	SWSKHVBE
	FL FIXED PLASTIC	PT0304401
65	**LOADING SWITCH P.C.BOARD ASS'Y**	
	SWITCH	
S002	SWITCH	SWSSCF21
66	**POWER TRANS P.C.BOARD ASS'Y <AH>**	
	CAPACITOR	
C903	TF CAP. (104)	MC10450TTF
	MISCELLANEOUS	
⚠ F901	FUSE 300mA/250V	FS3015201FUC
FH901,902	FUSE HOLDER	M203SPC
JL903a	WIRE HOLDER 5P	TE812500511
P901b	CONNECTOR 2P	TE627920201
66	**POWER TRANS P.C.BOARD ASS'Y <C,B1>**	
	CAPACITOR	
C903	TF CAP. (104)	MC10450TTF
	MISCELLANEOUS	
⚠ F901	FUSE 80mA/250V	FS8005202FEU
FH901,902	FUSE HOLDER	M203SPC
JL902b	CONNECTOR 6P SMK	TE712500631
JL903a	WIRE HOLDER 5P	TE812500511
P901b	CONNECTOR 2P	TE627920201
67	**NAD LINK P.C. BOARD ASS'Y**	
	CAPACITOR	
C771	ELECT 47uF/10V	EC47610TSU
	ICs	
Q771	ICZ86E0812PSC	ICZ86E0812PSC
Q772	IC TC74HC00	ICTC74HC00AF
	MISCELLANEOUS	
JL771a	WIRE HOLDER 4P	TE812500411
P771	PIN JACK	RJ1020-050
X771	CERA LOCK (12MHz)	XTM12000C1

NOTE: <AH> : U.S.A., Canadian model only
<C,B1>: European and Australian models only

SCHEMATIC DIAGRAM VOLTAGE CHARTS (all in volts)

Q101		
No.	PLAY	STOP
1	3.5	5.3
2	0.2	0.0
3	2.7	2.7
4	2.7	2.7
5	0.0	0.0
6	2.7	2.7
7	2.7	2.7
8	2.7	2.7
9	2.7	2.7
10	---	---
11	---	---
12	2.2	2.7
13	2.4	2.7
14	2.7	2.7
15	2.6	2.6
16	2.8	2.7
17	3.5	2.7
18	2.7	2.7
19	0.0	5.3
20	5.4	5.4

Q103					
No.	PLAY	STOP	No.	PLAY	STOP
1	2.7	2.7	25	5.5	5.5
2	2.7	2.7	26	---	0.1
3	2.6	2.5	27	---	---
4	2.7	2.6	28	0.0	0.0
5	3.0	2.7	29	0.0	0.0
6	2.7	2.7	30	0.1	0.1
7	3.0	2.9	31	2.7	2.7
8	2.7	2.7	32	2.7	2.7
9	2.7	2.6	33	5.3	0.0
10	5.3	5.4	34	1.2	1.7
11	2.7	2.7	35	1.5	3.9
12	2.7	2.7	36	5.4	5.4
13	2.7	2.7	37	2.2	2.6
14	2.6	2.7	38	2.7	1.3
15	2.7	2.7	39	2.7	2.7
16	0.8	0.8	40	3.5	2.7
17	1.3	1.3	41	0.0	0.0
18	0.0	2.7	42	2.7	2.7
19	0.0	0.0	43	2.7	2.7
20	5.3	5.3	44	2.6	2.5
21	5.3	0.1	45	2.7	2.7
22	5.2	5.2	46	2.7	2.6
23	5.3	5.3	47	2.7	2.7
24	---	---	48	2.6	2.5

Q151		
No.	PLAY	STOP
1	2.0	1.8
2	2.0	1.8
3	0.6	0.0
4	---	0.0
5	1.8	1.8
6	1.8	1.8
7	2.0	1.9
8	1.9	1.9
9	---	0.0
10	---	---
11	---	---
12	8.0	8.5
TAB	-8.7	-8.7

Q191			
No.	LEFT	RIGHT	STOP
1	0.0	P 5.2	5.2
2	5.2	5.2	5.2
3	0.0	P 4.2	0.6
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	8.1	8.1	8.4
7	P 4.2	0.0	0.6
8	3.7	3.7	2.0
9	P 5.2	0.0	5.2

NOTE : P=PULSE

Q171		
No.	PLAY	STOP
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	2.7	0.0
8	2.7	0.0
9	---	0.0
10	---	---
11	---	---
12	8.2	8.4
TAB	-8.8	-8.8

No.			
	R179	OPN 5.2	LOADING
	R181	CLS 5.2	ALL
3	OPN 6.0	CLS 6.2	PULSE
4	DWN 3.5	UP -3.5	CHUCKING
	R183	UP 5.2	ALL
	R185	DWN 5.2	PULSE

Q201		
No.	PLAY	STOP
1	5.3	0.0
2	---	0.0
3	5.3	0.0
4	2.7	0.0
5	---	---
6	5.3	0.0
7	---	---
8	5.3	5.3
9	0.0	0.0
10	0.0	0.0
11	---	---
12	0.0	---
13	---	---
14	---	---
15	---	---
16	5.3	5.3
17	0.0	0.0
18	2.9	2.9
19	2.7	2.7
20	2.7	2.7
21	0.0	0.0
22	2.9	2.9
23	5.3	5.3
24	2.7	2.7
25	---	0.0
26	0.0	0.0
27	2.7	2.7
28	0.0	0.0
29	---	---
30	0.0	0.0
31	2.7	2.7
32	2.7	2.7
33	5.3	5.3
34	---	0.0
35	2.6	2.6
36	2.8	0.0
37	2.6	2.6
38	2.7	2.7
39	0.0	4.5
40	5.3	5.3

Q201		
No.	PLAY	STOP
41	2.5	2.5
42	5.3	0.0
43	2.7	2.7
44	0.0	5.3
45	5.3	0.0
46	4.7	4.6
47	0.0	3.5
48	0.0	3.5
49	---	0.0
50	1.3	1.3
51	1.3	1.3
52	0.0	0.0
53	---	2.8
54	2.4	2.4
55	0.0	0.0
56	3.1	3.1
57	2.5	2.5
58	2.0	2.0
59	0.0	0.0
60	---	0.0
61	0.0	0.0
62	2.7	2.6
63	---	0.0
64	---	---
65	0.0	0.0
66	5.0	0.0
67	5.2	5.2
68	0.0	5.2
69	---	---
70	5.4	5.5
71	---	---
72	5.2	5.2
73	5.3	5.3
74	5.0	5.1
75	---	---
76	---	0.0
77	---	---
78	5.3	5.3
79	5.2	5.2
80	0.0	0.0

Q701		
No.	PLAY	STOP
1	---	---
2	---	---
3	---	---
4	---	---
5	---	---
6	---	---
7	---	---
8	5.2	5.2
9	5.0	5.1
10	---	---
11	5.2	5.2
12	0.0	5.2
13	0.0	0.0
14	5.2	5.2
15	0.0	0.0
16	5.0	0.0
17	5.5	5.5
18	---	---
19	---	---
20	0.0	0.0
21	5.2	5.2
22	0.0	0.0
23	2.1	2.1
24	2.1	2.1
25	2.1	2.1
26	5.2	5.2
27	5.2	5.2
28	5.2	5.2
29	5.2	5.2
30	5.2	5.2
31	---	---
32	---	---
33	0.0	0.0
34	2.5	2.5
35	2.5	2.5
36	4.6	4.5
37	5.1	5.1
38	5.1	5.0
39	0.0	0.0
40	5.2	5.2

Q701		
No.	PLAY	STOP
41	5.2	5.2
42	0.0	0.0
43	0.0	0.0
44	0.0	0.0
45	0.0	0.0
46	---	0.0
47	5.2	5.2
48	0.0	0.0
49	0.0	5.3
50	0.0	0.0
51	0.0	0.0
52	5.2	5.2
53	5.2	5.2
54	5.2	5.2
55	5.1	0.0
56	5.3	0.0
57	---	---
58	---	---
59	---	---
60	5.2	5.2
61	---	---
62	---	---
63	---	---
64	---	---
65	---	---
66	---	---
67	---	---
68	---	---
69	---	---
70	---	---
71	-22.1	-22.1
72	---	---
73	---	---
74	---	---
75	---	---
76	---	---
77	---	---
78	-21.8	-21.9
79	---	---
80	---	---

Q771		
No.	PLAY	STOP
1	5.2	5.2
2	5.2	5.2
3	5.2	5.2
4	5.2	5.2
5	5.2	5.2
6	2.7	2.7
7	2.2	2.2
8	5.2	5.2
9	0.0	0.0
10	5.2	5.2
11	5.2	5.2
12	5.2	5.2
13	5.2	5.2
14	0.0	0.0
15	0.0	0.0
16	0.0	0.0
17	5.2	5.2
18	5.2	5.2

Q772		
No.	PLAY	STOP
1	0	0
2	0	0
3	5.19	5.19
4	0	0
5	0	0
6	5.19	5.19
7	0	0
8	5.19	5.19
9	0	0
10	0	0
11	0	0
12	5.15	5.15
13	5.15	5.15
14	5.19	5.19

Q102		
E	4.2	5.2
C	1.9	0.4
B	3.5	5.3

Q104		
E	0.0	0.0
C	0.1	0.1
B	0.0	0.0

Q405		
Q405	PLAY	STOP/PAUSE
E	0.0	0.0
C	0.0	0.0
B	-5.3	0.7

Q406		
Q406	PLAY	STOP/PAUSE
E	0.0	0.0
C	0.0	0.0
B	-5.3	0.7

Q751		
Q751	PLAY	STOP
E	0.0	0.0
C	0.0	4.4
B	5.1	0.0

Q752		
Q752	PLAY	STOP
E	5.1	3.2
C	-5.2	3.1
B	5.2	0.0

Q753		
Q753	PLAY	STOP
E	0.0	0.0
C	5.2	0.0
B	0.0	4.4

Q921		
Q921	PLAY	STOP
E	4.7	5.2
C	8.2	8.5
B	5.4	5.4

D935		
D935	PLAY	STOP
A	-18.0	-18.1
K	-22.9	-23.0

D901 -D904		
	PLAY	STOP
901K	8.2	8.4
904A	-8.8	-8.9
901A	AC 7.0	AC 7.0
902A	AC 7.0	AC 7.0

S001(CHUCKING)	
DOWN	0
UP	2.1

S002(LOADING)	
CLOSE	2.1
OPEN	0

Q001/Q002	
Q001/2 C	5.2
Q001 E	5.0
Q002 E	5.1

Q003	
C	5.2
E	4.5

D001	
A	5.2
K	4.1

HEATER	
	AC 4.6

Q301		
No.	PLAY	STOP
1	0.0	4.4
2	0.0	0.0
3	3.0	3.2
4	0.0	0.0
5	2.6	2.6
6	---	0.0
7	5.4	5.4
8	2.7	2.7
9	5.3	5.3
10	2.7	2.7
11	5.4	5.4
12	2.7	2.7
13	0.0	0.0
14	2.7	2.7
15	5.4	5.4
16	2.7	2.7
17	5.4	5.4
18	2.6	2.6
19	2.8	2.8
20	0.0	0.0
21	0.0	0.0
22	5.5	5.5
23	5.4	5.4
24	5.3	5.3

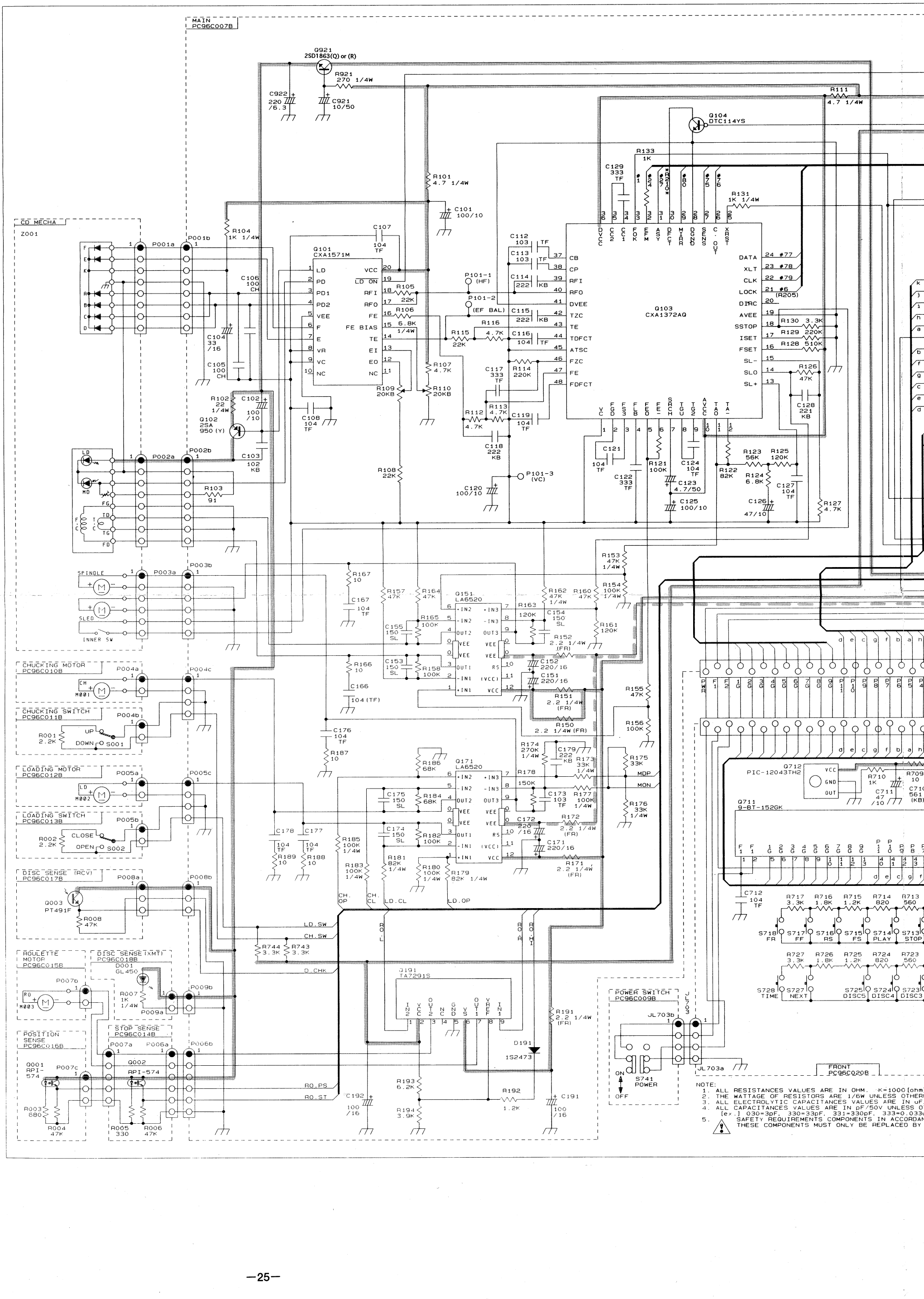
Q401		
No.	PLAY	STOP
1	0.0	0.0
2	1.5	1.6
3	1.5	1.5
4	-5.4	-5.4
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	5.5	5.5

Q402		
No.	PLAY	STOP
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	-5.4	-5.4
5	1.5	1.5
6	1.5	1.5
7	0.0	0.0
8	5.4	5.4

Q901		
No.	PLAY	STOP
1	-8.8	-8.9
2	0.0	0.0
3	-5.4	-5.4
4	0.0	0.0
5	-8.8	-8.9
6	-6.9	-6.9
7	5.1	3.2
8	1.1	1.1
9	5.5	5.5
10	1.1	1.1
11	0.6	0.6
12	5.4	5.4
13	8.2	8.4
14	5.4	5.4
15	1.3	1.3
16	8.2	8.4

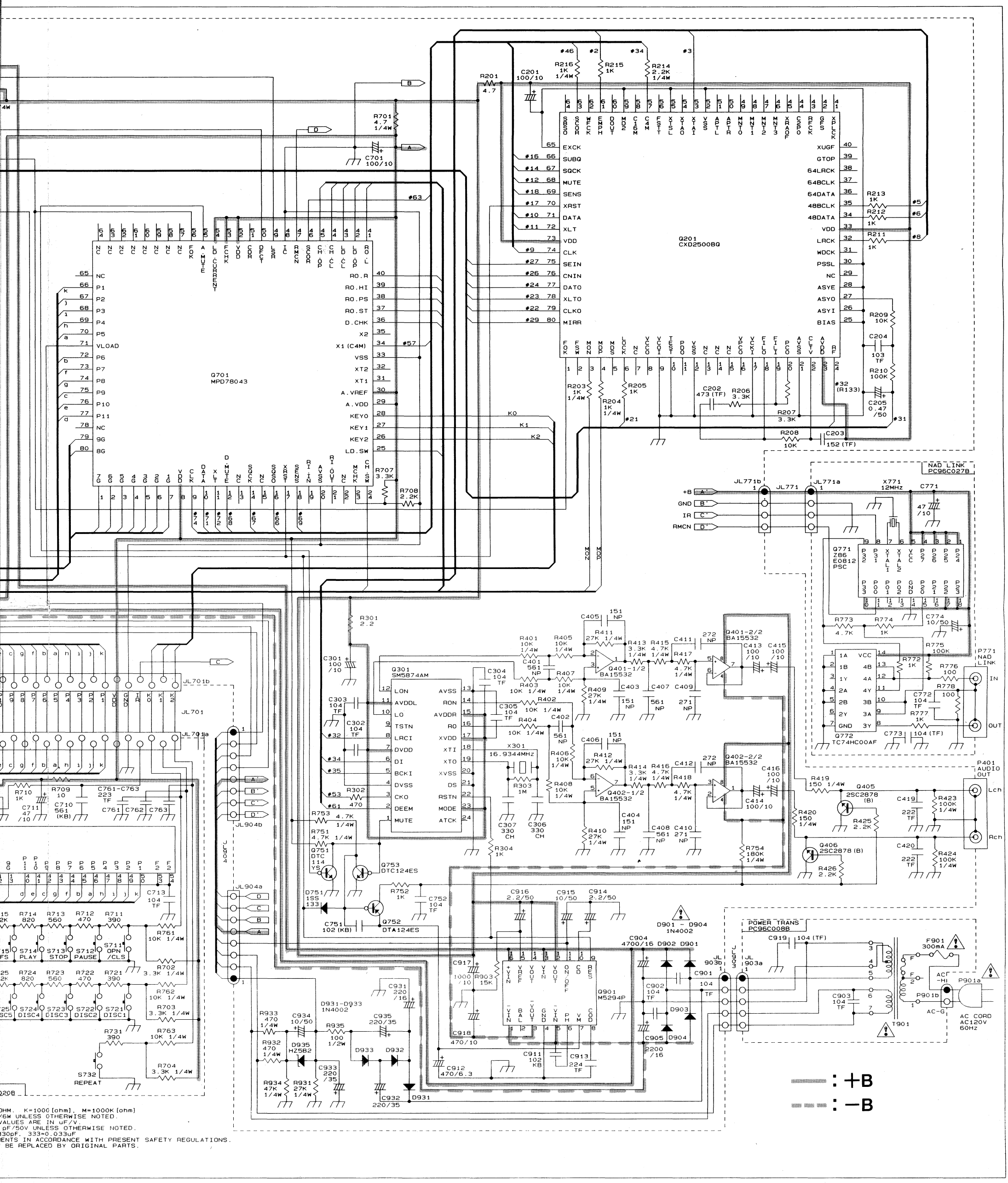
No.	P-ON	P-OFF
11	0.6	0.0

SCHEMATIC DIAGRAM (U.S.A. AND CANADIAN MODELS)

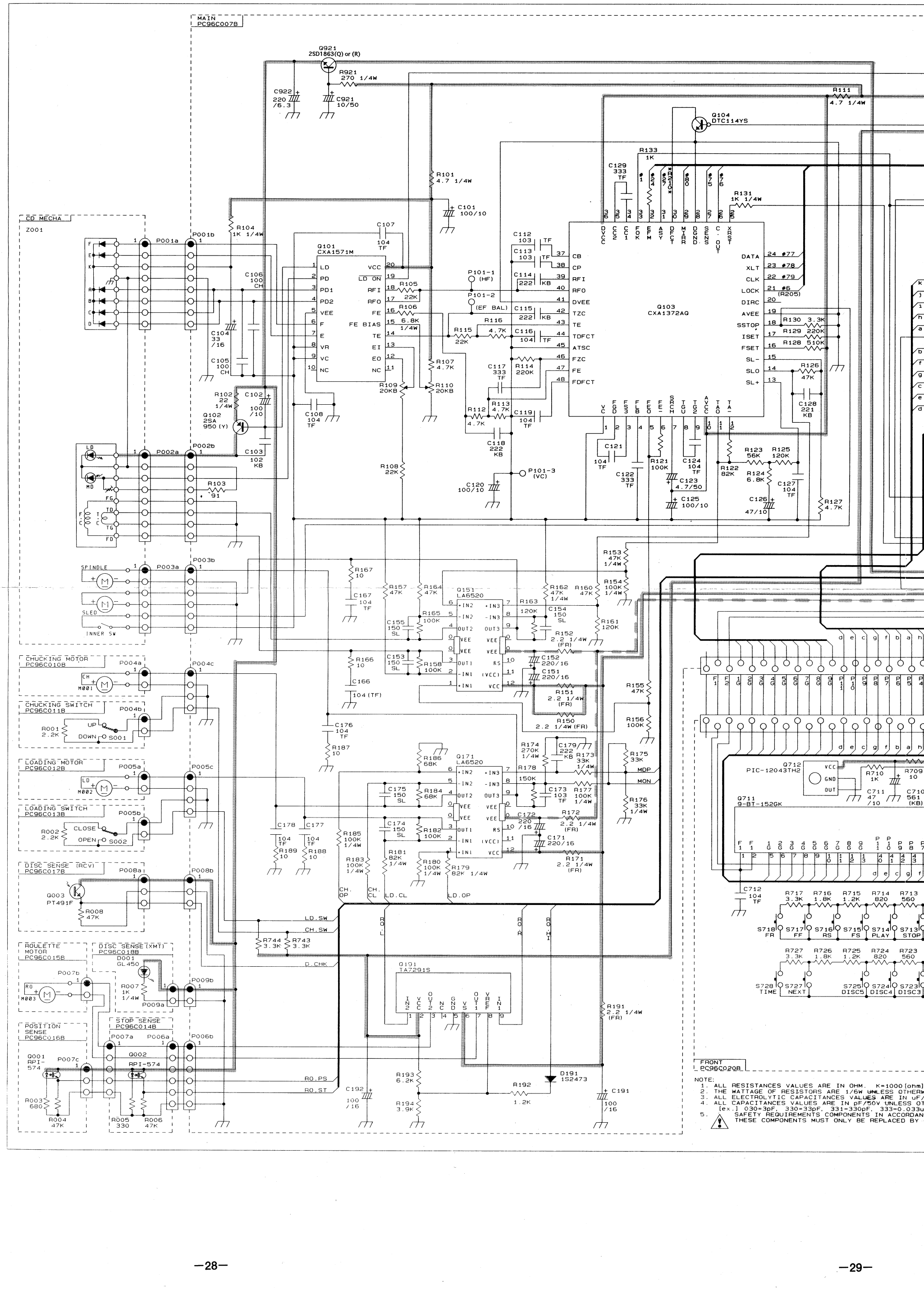


NOTE:
1. ALL RESISTANCES VALUES ARE IN OHM. K=1000(ohm)
2. THE WATTAGE OF RESISTORS ARE 1/6W UNLESS OTHERW
3. ALL ELECTROLYTIC CAPACITANCES VALUES ARE IN uF.
4. ALL CAPACITANCES VALUES ARE IN pF/50V UNLESS O
   (ex.) 030=3pF, 330=33pF, 331=330pF, 333=0.033
5. ⚠ SAFETY REQUIREMENTS COMPONENTS IN ACCORDAN
   THESE COMPONENTS MUST ONLY BE REPLACED BY

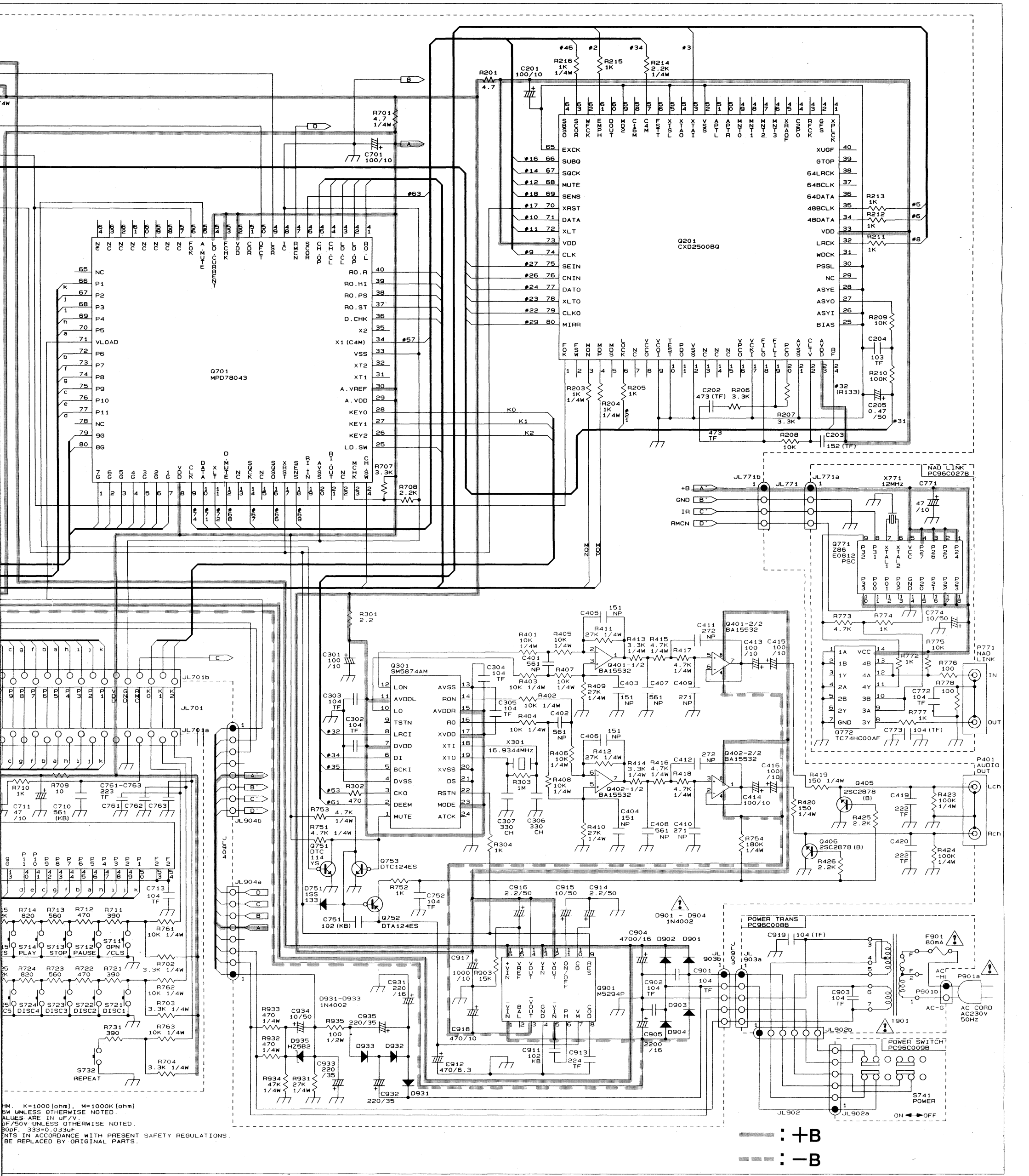
F G H I J K


Q201
CXD2500BQ
Q701
MPD78043
Q301
SM5874AM
Q771
Z86
E0812
PSC
Q772
TC74HC00AF
Q901
M5294P
Q401-2/2
BA15532
Q402-1/2
BA15532
Q402-2/2
BA15532
Q405
2SC2878
(B)
Q406
2SC2878 (B)
Q751
DTC
114
YS
Q752
DTA124ES
Q753
DTC124ES
X301
16.9344MHz
X771
12MHz
R201
4.7
R216
1K
1/4W
R215
1K
R214
2.2K
1/4W
R701
4.7
1/4W
C201
100/10
C701
100/10
R707
3.7K
R708
2.2K
R709
10
R710
1K
C710
561
(KB)
C711
47
/10
C761-C763
223
TF
C761
C762
C763
R761
10K 1/4W
R762
10K 1/4W
R763
10K 1/4W
R702
3.3K 1/4W
R703
3.3K 1/4W
R704
3.3K 1/4W
R731
390
S732
REPEAT
R711
390
R712
470
R713
560
R714
820
S711
OPN
/CLS
S712
PAUSE
S713
STOP
S714
PLAY
R721
390
R722
470
R723
560
R724
820
S721
DISC1
S722
DISC2
S723
DISC3
S724
DISC4
R203
1K
1/4W
R204
1K
1/4W
R205
1K
C202
473 (TF)
R206
3.3K
R207
3.3K
R208
10K
C203
152 (TF)
C204
103
TF
R209
10K
R210
100K
C205
0.47
/50
R213
1K
R212
1K
R211
1K
R209
10K
R773
4.7K
R774
1K
C774
10/50
R775
100K
R772
1K
R776
100
R778
100
R777
1K
C772
104
TF
C773
104 (TF)
C771
47
/10
R301
2.2
C301
100
/10
C303
104
TF
C302
104
TF
C304
104
TF
C305
104
TF
R302
470
R303
1M
R304
1K
C307
330
CH
C306
330
CH
R753
4.7K
1/4W
R751
4.7K 1/4W
R752
1K
C752
104
TF
C751
102 (KB)
D751
1SS
133
R401
10K
1/4W
R405
10K
1/4W
C401
561
NP
R403
10K 1/4W
R407
10K
1/4W
R402
10K 1/4W
R404
10K 1/4W
C402
561
NP
R406
10K
1/4W
R408
10K
1/4W
R410
27K
1/4W
R411
27K 1/4W
R412
27K 1/4W
R409
27K
1/4W
C403
151
NP
C404
151
NP
C405
151
NP
C406
151
NP
C407
561
NP
C408
561
NP
C409
271
NP
C410
271
NP
C411
272
NP
C412
272
NP
R413
3.3K
1/4W
R414
3.3K
1/4W
R415
4.7K
1/4W
R416
4.7K
1/4W
R417
4.7K
1/4W
R418
4.7K
1/4W
C413
100
/10
C414
100/10
C415
100
/10
C416
100
/10
R419
150 1/4W
R420
150
1/4W
R754
180K
1/4W
C419
222
TF
C420
222
TF
R423
100K
1/4W
R424
100K
1/4W
R425
2.2K
R426
2.2K
C916
2.2/50
C915
10/50
C914
2.2/50
C917
1000
/10
R903
15K
C918
470/10
C912
470/6.3
C911
102
KB
C913
224
TF
C904
4700/16
D902
D901
D903
D904
C905
2200
/16
C901
104
TF
C902
104
TF
C903
104
TF
D901 - D904
1N4002
D931-D933
1N4002
C931
220
/16
R933
470
1/4W
C934
10/50
R935
100
1/2W
C935
220/35
R932
470
1/4W
D935
HZ5B2
D933
D932
C933
220
/35
R934
47K
1/4W
R931
27K
1/4W
C932
220/35
D931
C919
104 (TF)
F901
300mA
P901a
P901b
AC-HI
AC-G
AC CORD
AC120V
60Hz
T901
JL701
JL701a
JL701b
JL771
JL771a
JL771b
JL903a
JL903b
JL904a
JL904b
P771
NAD
LINK
IN
OUT
P401
AUDIO
OUT
Lch
Rch
NAD LINK
PC96C027B
POWER TRANS
PC96C008B
+B
GND
IR
RMCN
K0
K1
K2
: +B
: −B

SCHEMATIC DIAGRAM (EUROPEAN AND AUSTRALIAN MODELS)



F G H I J K

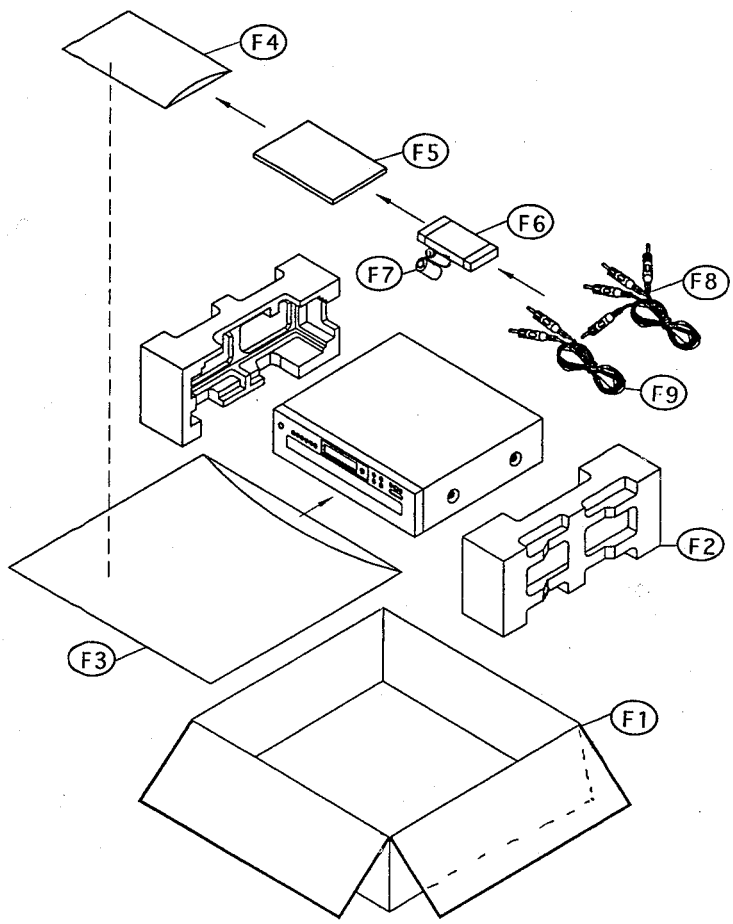


HM. K=1000[ohm], M=1000K[ohm]
6W UNLESS OTHERWISE NOTED.
ALUES ARE IN uF/V.
0F/50V UNLESS OTHERWISE NOTED.
80pF. 333=0.033uF.
ENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS.
BE REPLACED BY ORIGINAL PARTS.

PACKING VIEW / PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
F1	CG523AH313NAD01	CARTON BOX
F2	PLCG5	CUSHION L/R
F3	PE230330400RJP	POLY BAG
F4	SD60057500RJP	PACKING BAG
F5	OP523NAD01	INSTRUCTION BOOK <AH>
	OP123NAD01	INSTRUCTION BOOK <C,B1>
F6	RC604NAD01	REMOTE CONTROLLER
F7	BTUM3X201	BATTERY
F8	CD47-1	RCA WIRE
F9	CA01RP07001	NAD LINK WIRE

NOTE: <AH> : U.S.A., Canadian model only
<C,B1>: European and Australian models only



NOTES :

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